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IN THE

Supreme Court of the United States

OCTOBER TERM, 1996

UNITED STATES SURGICAL CORPORATION,
Petitioner,

v.

ETHICON, INC. and
JOHNSON & JOHNSON HOSPITAL SERVICES, INC.,
Respondents.

Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

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APPENDIX TO PETITION FOR A WRIT OF CERTIORARI

Of Counsel:

ARTHUR R. MILLER
1545 Massachusetts Ave.
Cambridge, Mass. 02138
(617) 495-4111

THOMAS R. BREMER
Senior Vice President
and General Counsel

JOHN C. ANDRES
Chief Patent Counsel
United States Surgical
Corporation
150 Glover Avenue
Norwalk, Conn. 06856
(203) 845-1000

* Counsel of Record

JOHN G. KESTER *
J. ALAN GALBRAITH
WILLIAM E. MCDANIELS

WILLIAMS & CONNOLLY
725 12th Street, N.W.
Washington, D.C. 20005
(202) 434-5000

Attorneys for Petitioner

WILSON - EPES PRINTING CO., INC. - 789-0096 - WASHINGTON, D.C. 20001

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APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

94-1386, -1419

UNITED STATES SURGICAL CORPORATION,
Plaintiff-Appellant,

v.

ETHICON, INC. and JOHNSON & JOHNSON
HOSPITAL SERVICES, INC.,
Defendants/Cross-Appellants.

William E. McDaniels, Williams & Connolly, of Washington, D.C., for plaintiff-appellant. Of counsel were *J. Alan Galbraith, David S. Blatt, Thomas R. Bremer,* and *John C. Andres.*

David F. Dobbins, Patterson, Belknap, Webb & Tyler, of New York, New York, for defendants/cross-appellants. Of counsel were *Gregory L. Diskant* and *Eugene M. Gelernter.*

On remand from the Supreme Court of the United States.

DECIDED: January 3, 1997

Before NEWMAN, *Circuit Judge*, BENNETT, *Senior Circuit Judge*, and RADER, *Circuit Judge*.

NEWMAN, *Circuit Judge*.

The court's prior judgment of this appeal and cross-appeal was vacated by the Supreme Court and remanded "for further consideration in light of *Markman v. Westview Instruments, Inc.*, 517 U.S. —— (1996)." *U.S. Surgical Corp. v. Ethicon, Inc.*, 116 S.Ct. 1562 (1996). Our prior judgment affirmed the judgment of the United States District Court for the District of Connecticut,[1] entered on jury verdicts that claim 1 of U.S. Surgical's United States Patent No. 5,100,420 (the '420 patent) is infringed but invalid for obviousness, and that claims 1, 2, and 7 of United States Patent No. 5,084,057 (the '057 patent) are not infringed and are invalid for obviousness. The issue of inequitable conduct during patent prosecution was decided before trial, by summary judgment in favor of U.S. Surgical. Each of U.S. Surgical and Ethicon appealed the rulings adverse to it. After full briefing and oral argument this court entered judgment pursuant to Federal Circuit Rule 36:

> Rule 36: *Judgment of affirmance without opinion.*—
>
> The court may enter a judgment of affirmance without opinion, citing this rule, when it determines that any of the following circumstances exist:

---

[1] *U.S. Surgical Corp. v. Ethicon, Inc.*, No. 5:92 CV 00134 (AVC) (D. Conn. Feb. 11, 1993) (Summary Judgment); February 18, 1994 (Judgment Order); June 9, 1994 (Ruling on Post-trial Motions)).

(a) the judgment, decision or order of the trial court appealed from is based on findings that are not clearly erroneous;

(b) the evidence in support of a jury verdict is sufficient;

(c) summary judgment, directed verdict, or judgment on the pleadings is supported by the record;

(d) the decision of an administrative agency warrants affirmance under the standard of review in the statute authorizing the petition for review; or

(e) a judgment or decision has been entered without an error of law;

and an opinion would have no precedential value.

Appeals whose judgments are entered under Rule 36 receive the full consideration of the court, and are no less carefully decided than the cases in which we issue full opinions. The Rule permits the court to dispense with issuing an opinion that would have no precedential value, when the circumstances of the Rule exist. *See Taylor v. McKeithen,* 407 U.S. 191, 194 n.4 (1972) ("We, of course, agree that the courts of appeals should have wide latitude in their decisions of whether or how to write opinions. That is especially true with respect to summary affirmances.")

Seven weeks after this decision, reported at 48 F.3d 1237 (Fed. Cir. 1995) (Table), for which rehearing and rehearing *en banc* were denied, the Federal Circuit decided *Markman v. Westview Instruments, Inc.,* 52 F.3d 967, 34 USPQ2d 1321 (Fed. Cir. 1995) (*en banc*). The Supreme Court granted *certiorari* in *Markman* and also upon U.S. Surgical's petition. After deciding the *Markman* appeal, reported at 517 U.S. ——, 116 S. Ct.

1384, 38 USPQ2d 1461 (1996), the Court instructed the Federal Circuit to give further consideration to U.S. Surgical's case in light of the Court's decision in *Markman*. We have done so.

The judgment of the district court is affirmed, on the ground of invalidity of the '420 and '057 patents based on obviousness. We do not reach the issues of infringement and the conditional cross-appeal of the issue of inequitable conduct. *See Consolidated Aluminum Corp. v. Foseco Int'l Ltd.*, 910 F.2d 804, 814, 15 USPQ2d 1481, 1489 (1990) ("a party may defend a judgment 'on any ground properly raised below' ") (citing *Washington v. Yakima Indian Nation*, 439 U.S. 463, 476 n.20 (1979)); *Lough v. Brunswick Corp.*, 86 F.3d 1113, 1123, 39 USPQ2d 1100, 1107 (Fed. Cir. 1996) ("No further public interest is served by our resolving an infringement question after a determination that the patent is invalid."). We now fully explain our decision.

The U.S. Surgical Inventions

The inventions claimed in the '420 patent and its continuation-in-part the '057 patent are for a surgical instrument for ligating blood vessels and other tissues during endoscopic surgery, by applying multiple ligating clips in sequence.

Endoscopic surgery is a procedure whereby instead of opening the abdomen or other body cavity by incision to provide open access to the surgical site, the surgery is performed by inserting the surgical instruments into the body through small tubes called trocars. The small size of the incisions that accommodate the trocars results in less tissue damage, less pain, and faster healing than for traditional open surgery. In performing endoscopic surgery the body cavity is inflated with a gas, called an insufflating gas, to provide working space. For most pro-

cedures today a miniature video camera is used to televise the surgical site, the enlarged video image appearing upon an external screen and guiding the surgeon or surgical team in manipulating the instruments through the trocars.

Endoscopic surgery was in somewhat limited use for many years, having been used mostly for the ligation of fallopian tubes, the surgeon viewing the site through an eyepiece. Endoscopic procedures experienced rapid expansion after about 1989, particularly for gallbladder removal. Witnesses disputed at trial whether the expansion was due to the development of the miniature video camera or the development of U.S. Surgical's endoscopic multiple clip applier.

During both endoscopic and open surgery, blood vessels may be closed and tissues clamped using small "U" shaped clamps called ligating clips. Ligating clips are applied by an instrument that positions the clip about the tissue or vessel to be secured and then compresses the clip. When initially developed, ligating clip instruments were capable of being loaded with only one clip at a time, and required reloading between each application. Then U.S. Surgical developed a ligating clip applier for open surgical use that applied multiple clips in succession, without reloading the instrument. This instrument, having the brand name "Premium Surgiclip," is the subject of United States Patent No. 5,030,226 (the '226 patent). The Premium Surgiclip and the '226 patent are prior art to the '420 and '057 patents in suit, and were the subject of extensive testimony at trial.

At trial witnesses explained the subsequent development of the instrument of the patents in suit, a ligating clip applier for endoscopic use that applies multiple clips in succession without withdrawing and reloading the instrument. U.S. Surgical's instrument, having the brand name EndoClip, was the first multiple clip applier for endoscopic

use. The instrument is depicted in the '420 patent as follows:

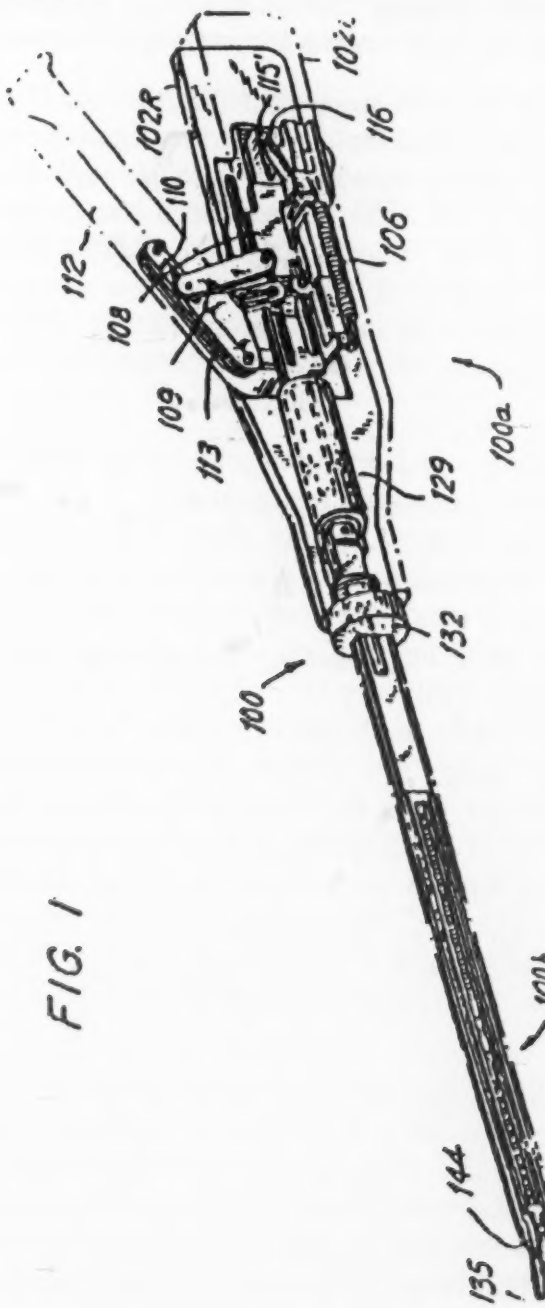

FIG. 1

Fig. 1 of '420 patent.

The instrument is depicted in the '057 patent with a different handle, as follows:

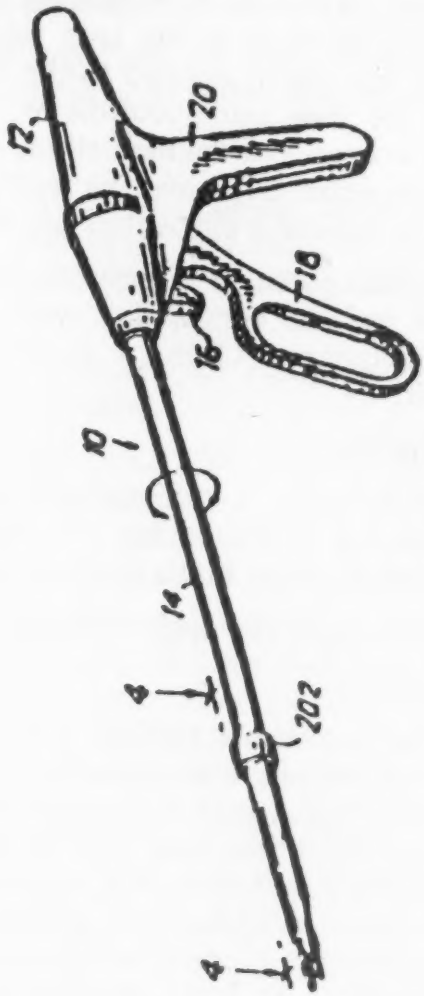

Fig. 1 of '057 patent.

It is seen that these instruments have an elongated shank that holds the ligating clips and is shaped for endoscopic use through a trocar. After insertion into the body cavity a clip is pushed into position in the jaws using controls on the handle, and the clip is applied to the tissue to be ligated by closing the jaws using controls on the handle. The jaws are then opened and the next clip is pushed into position. Thus successive clips may be applied without withdrawing the instrument from within the body.

Claim 1 of the '420 patent is directed to the combination of the trocar and the clip applier, each component having defined limitations. Claim 1 is the only '420 patent claim in suit:

1. In combination:

   a) a trocar having a cannula, and valve means for sealing said cannula, said cannula being adapted for entry into a body cavity;

   b) an endoscopic clip applier having:

      i) a frame;

      ii) an endoscopic portion defining a longitudinal axis and extending distally from said frame, said endoscopic portion being insertable into said cannula through said valve means in sealing engagement therewith, said endoscopic portion further including a plurality of surgical clips disposed in an array and clip closing means for sequentially closing said surgical clips; and

      iii) seal means associated and adapted to cooperate with at least one of said endoscopic portion and said frame to obstruct passage of gaseous media from the body cavity.

Claim 1, the broadest claim of the '057 patent, also describes the endoscopic apparatus as comprising several elements. The claim elements are defined in terms of their function, as provided in 35 U.S.C. § 112 ¶ 6:

> 1. An apparatus for endoscopic application of surgical clips to body tissue which comprises:
>
> a) frame means;
>
> b) endoscopic means connected to said frame means of generally elongated configuration and extending distally from said frame means and including:
>
> i) means for storing a plurality of surgical clips;
>
> ii) means for individually advancing said clips to the distal portion of said endoscopic means for positioning adjacent the body tissue to be clipped;
>
> iii) means for at least partially closing said clip at least sufficient to grip the body tissue after the clip has been advanced distally to said distal portion of said endoscopic means; and
>
> iv) gaseous sealing means.

Claim 2 of the '057 patent specifies the use of silicon grease as the gaseous sealing means of clause iv, and claim 7 is directed to a disposable device as in claim 1.

Ethicon's defense that the claims are invalid for obviousness was based on the ground that U.S. Surgical had merely adapted to endoscopic use its own, prior art multiple clip applier, the Premium Surgiclip of the '226 patent, by known and routine adaptation. Thus Ethicon presented evidence and argument that U.S. Surgical had simply elongated the body of its prior art multiple clip applier

so that it could be used through a trocar, with a sealing means to prevent escape of the insufflating gas through the trocar. Ethicon adduced extensive evidence that such adaptation was well known to persons of ordinary skill in the field of endoscopic instruments. U.S. Surgical countered with evidence and argument to the contrary.

The jury held, by special verdicts, that the claims in suit were invalid for obviousness. On appellate review we determine whether, on correct instructions of law, there was substantial evidence whereby a reasonable jury could have reached the verdict reached by this jury. *See Litton Sys., Inc. v. Honeywell, Inc.*, 87 F.3d 1559, 1566, 39 USPQ2d 1321, 1324 (Fed. Cir. 1996) ("Substantial evidence describes that minimum quantum of evidence from which a jury might reasonably afford relief."); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 72 F.3d 857, 862, 37 USPQ2d 1161, 1163 (Fed. Cir. 1995) ("Substantial evidence is such relevant evidence, on the record as a whole, as could be accepted by a reasonable mind as adequate to support the verdict.") Conflicting evidence and argument must be viewed as resolved favorably to the party in whose favor the jury found. The reviewing court must give appropriate deference to the jury's choices in weighing the evidence, in deciding between opposing positions, and in drawing factual inferences. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989) (" 'the appellate court's function is exhausted when that evidentiary basis [of the jury's verdict] becomes apparent, it being immaterial that the court might draw a contrary inference or feel that another conclusion is more reasonable.' ") (quoting *Lavender v. Kurn*, 327 U.S. 645, 653 (1946)); *Medtronic, Inc. v. Intermedics, Inc.*, 799 F.2d 734, 742, 230 USPQ 641, 646 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1033 (1987).

The Prior Art

As we have remarked, Ethicon's position was that U.S. Surgical had simply elongated its prior art multiple ligating instrument so that it could be inserted through a trocar, and used known endoscopic sealing mechanisms to inhibit escape of the insufflating gas through the trocar. Expert witnesses testified that these modifications were well known to persons of ordinary skill in the art of endoscopic instruments. The witnesses presented several prior art patents, and exhibited many actual instruments, all having the common endoscopic characteristics of an elongated body and sealable engagement with the trocar.

The district court mentioned, in the opinion accompanying the denial of post-trial motions, that the U.S. Surgical's technical expert testified that there were approximately forty different prior art multiple clip appliers for conventional open surgery. He testified that at least four of them—the Premium Surgiclip of the '226 patent and the multiple clip appliers shown in the Montgomery patent, the Peters patent, and the Lachakar patent—embodied all of the elements of the '420/'057 claims except for the elongated body and sealing means. He testified that an elongated body and sealing means are characteristics of all endoscopic surgical instruments. In evidence were a variety of actual instruments for endoscopic surgery, all having these characteristics. These endoscopic instruments included graspers, scissors, dissectors, and single clip appliers. All had an elongated body and were adapted for sealing engagement with the trocar.

Also in evidence were references describing prior endoscopic devices for the application of multiple fasteners other than ligating clips. U.S. Patent No. 3,870,048 to Yoon showed an applier for multiple elastic rings for ligating fallopian tubes, stating that "[i]t is possible to

load suture ring clips within the applicator in end-to-end series fashion. . . . This permits a number of clips to be applied during a procedure without the need of having to withdraw the applicator from the surgical field in order to load another clip into the applicator." U.S. Patent No. 4,226,239 to Polk also showed an instrument for endoscopic application of multiple ligating rings. The prior art also included at least one endoscopic multiple staple applier, Patent No. 4,944,443 to Oddsen. All of the endoscopic instruments for applying multiple fasteners had the common characteristics of elongation for use through a trocar, and most were sealed against escape of the gas through the trocar. Several references showed the use of silicon grease, as specified in claim 2 of the '057 patent, or valves, as specified in claim 1 of the '420 patent, to maintain the seal.

The testimony of U.S. Surgical's technical expert that the elongated body and the seal are common characteristics of endoscopic instruments was described by Ethicon as a concession of great weight. This evidence was stressed at trial, as Ethicon pressed its argument that U.S. Surgical had simply adapted its '226 patent multiple clip applier for endoscopic use, and that it was obvious to do so, pointing to many other instruments that had been adapted in the same way. U.S. Surgical points out that this same expert and several other expert witnesses testified about the difficulties of designing the '420/'057 endoscopic multiple clip applier and the time and cost involved. We take note of the conflicting testimony and the opposing expert opinions of witnesses for these parties, and of the lengthy explorations by these witnesses of this technology and the development and characteristics of these surgical instruments.

In comparing the '420/'057 instruments with the prior art instruments, Ethicon's patent expert testified that the

prior art '226 patent was the closest prior art and that the relevant elements of the structure of the '226 patent "were adopted into the subject matter of the '057 and '420 patent applications." Ethicon's technical expert pointed out to the jury all of the similarities of the structure and mechanisms between the device of the '226 patent and the '420/'057 patents. He pointed to the jaws to hold the clip, the pusher for advancing a stored clip to the jaws, the grooves in the face of the jaws to receive the clip, and the mechanism for closing the clip about the tissue to be ligated. The drawings of the jaws in the '226 patent and in the '420/'057 patents show this similarity:

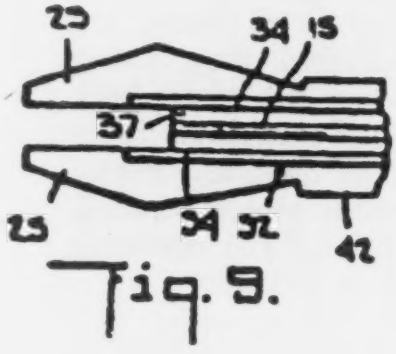

Fig. 9 of '226 Patent

FIG. 19a

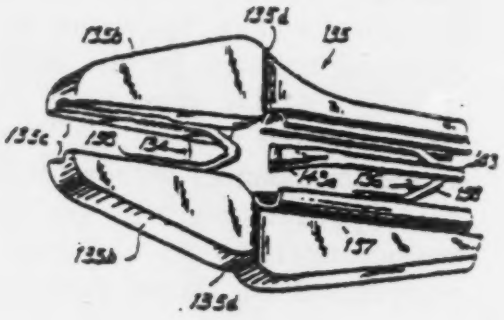

Fig. 19a of '420 Patent

Witnesses testified that the operation of the '226 instrument and the '420/'057 patents was essentially the same. It was explained that in both the '226 and '420/'057 instruments the jaw blade, clip carrier, and pusher bar are all enclosed in a channel assembly from which the jaws protrude at the end. In the '226 patent the applicator is described in the Abstract as:

> The surgical clip applicator has a pusher bar which positions the foremost clip from a clip carrier into

> a ready-to-fire position between the jaws prior to squeezing of the handles together. When the applicator is fired, the previously positioned surgical clip can be crimped about a vessel and when the jaws are released, a new clip is placed between the jaws for the next firing. A channel assembly moves over the jaws to close the jaws while the pusher bar is retracted into the clip carrier for delivering the foremost clip from the carrier upon release of the handles.

Referring to Fig. 4 of the '226 patent, it was explained at trial that the pusher bar (35) moves a clip (33) into the channels in the faces of the jaws (25). When a clip is in the jaws and the handles are closed, the external channel (38) moves forward over the beveled portion of the jaws, which, by virtue of their beveled shape, are squeezed together by the external channel, thus closing the clip. At the same time, the pusher bar moves back to engage the next clip in line. When the handle is released the channel withdraws, the jaws open and release the clipped tissue, and the pusher bar moves forward, positioning the next clip into the jaws. The operating components are shown in the patent as follows:

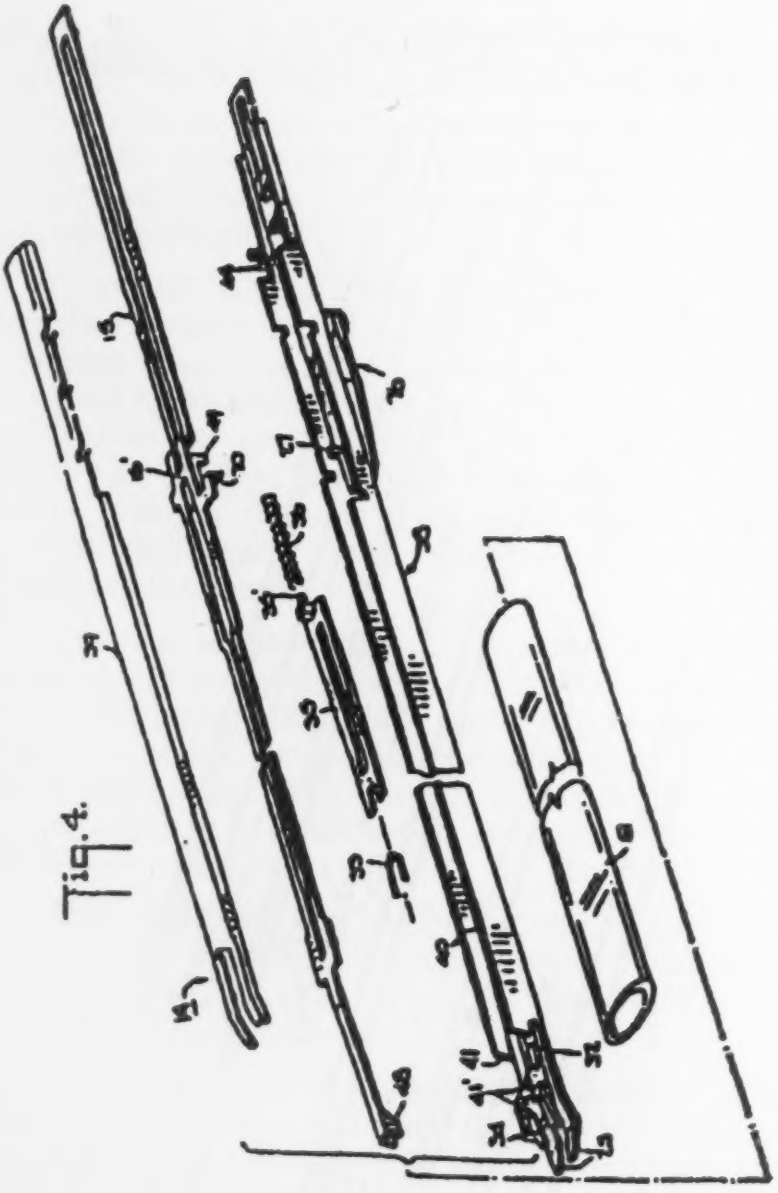

Fig. 4 of '226 Patent

In the '226 patent the clip carrier is described as "an elongated channel having a pair of side walls or rails between which the clips are slidably guided, a pusher which slides between the rails, and a spring for biasing the pusher in the forward direction." Col. 4, lines 45-54.

The corresponding assembly, shown in Fig. 18 of the '420 patent, was the subject of comparative testimony:

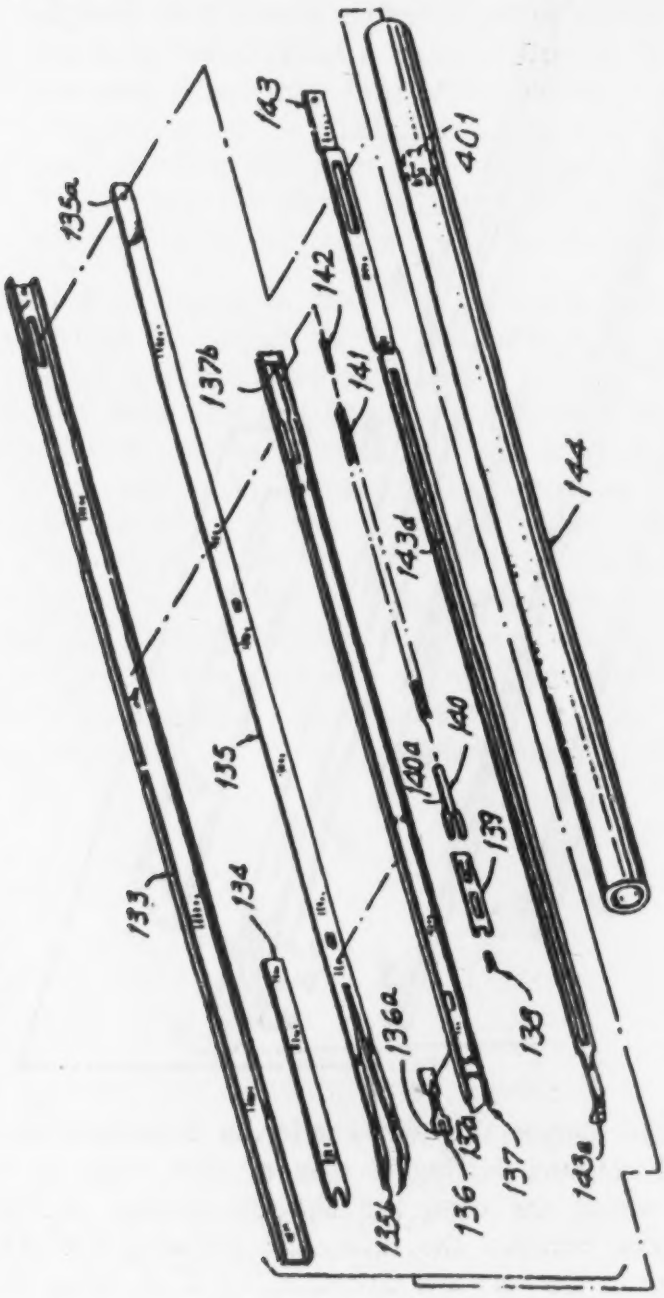

Fig. 18 of '420 Patent

It was explained that the pusher bar (143) moves a ligating clip (138) into the channels in the faces of the jaws (135-b). When a clip is in the jaws and the handles are closed, the external channel (133) moves forward over the beveled portion of the jaws, squeezing them together and closing the clip.

To counter this evidence of similarity, U.S. Surgical witnesses testified that the '420/'057 instrument was not a routine adaptation of a prior instrument, and stressed the long development time and engineering difficulties involved in the conversion of the '226 device to endoscopic use. Ethicon challenged these arguments and their factual basis on cross-examination and elicited testimony that the development time related primarily to unclaimed features of the handle.

There was testimony about the seal and how it was achieved. In its infringement case U.S. Surgical argued that "valve means" in the '420 patent included any known means for sealing the clip applier in the trocar, including valves and gaskets. U.S. Surgical argued at trial as stated in its proposed jury instruction construing this term for infringement purposes:

> The structure for performing this [valve means] function includes all such structures contained in trocars known in the art at the time the '420 Patent Application was filed.

U.S. Surgical presented testimony to this effect at trial, thus providing substantial basis for the jury to find that the "valve means" of the '420 patent was known in the prior art. U.S. Surgical does not now dispute that the "valve means" of its '420 patent is found in prior art endoscopic instruments.

In the course of the extensive explanation and comparisons at trial of the prior art devices and the '420/'057 devices, there was no dispute concerning the content of

the references or the structures that they described. There was no dispute concerning the structures described in the '420/'057 patents, or concerning the meaning of technical terms or words of art as used in the prior art or in the patents in suit. The jury was instructed that the technical terms had their plain meaning, as the district court mentioned in its opinion on the post-trial motions. U.S. Surgical did not proffer a particular "construction" of technical terms in order to distinguish the claimed inventions from prior art devices. Neither party departed from the plain meaning of the words that were used in the claims and in the specifications, and in the prior art. Although U.S. Surgical has raised on this appeal the issue of "claim construction," as we shall discuss *post*, there was no argument at trial as to the meaning of technical terms or words of art insofar as they concern the determination of obviousness.

There was opinion evidence on both sides of the question of obviousness. We turn to the objecive factors, for as the district court instructed the jury, such evidence must be considered in the determination of obviousness.

Objective Factors

Objective factors assist in understanding how the invention was viewed in its field of endeavor, and provide an important practical guide to the decisionmaker. It was explained to the jury that the context in which the invention arose and its reception in the marketplace are indicia of unobviousness, and must be considered.

Witnesses for U.S. Surgical testified that the EndoClip, a commercial embodiment of the '420/'057 patents, had revolutionized endoscopic surgery and made endoscopic gall bladder removal possible. Its commercial success was emphasized, and it was stressed that the EndoClip was the first and for some years the only endoscopic multiple clip applier on the market. U.S. Surgical pointed out that the

most relevant prior art, *viz.* single clip appliers for endoscopic surgery and multiple clip appliers for open surgery, had existed for more than a decade before U.S. Surgical produced the EndoClip for endoscopic surgery. U.S. Surgical presented evidence of the rapid acceptance and adoption of new endoscopic procedures, based on its new multiple clip applier.

Witnesses for Ethicon testified that the growth of endoscopic surgery was due to the miniature video camera, not the multiple clip applier. They testified that before a tiny camera was available to televise images of the abdominal cavity, whereby a team of surgeons could operate with a common view of the surgical field, endoscopic surgery was largely limited to litigation of fallopian tubes, a simple procedure performed by a surgeon peering through an eyepiece. According to Ethicon, U.S. Surgical's EndoClip was developed for and had its only use for tubal ligation, and its later commercial growth was due to the sheer luck of being on the market when endoscopic surgery underwent its rapid expansion upon the capability of televising from inside the body.

Thus U.S. Surgical characterized its '420/'057 multiple clip applier as a pioneering advance in the field of endoscopic surgery, while Ethicon described the '420/'057 instrument as an obvious adaptation of a prior art multiple clip applier, whose commercial success was due to unrelated factors. These conflicting arguments were fully presented at trial. Witnesses, including surgeons, supported both sides. The jury was presented with questions of credibility and weight as well as factual disputes, as the jury decided whether the inventions of the claims in suit would have been obvious to a person of ordinary skill in the field of the invention at the time the invention was made. Although there were indeed questions of credibility and weight of evidence, the jury was not required to choose between alternative meanings of technical terms

or words of art, or decide the scope of the claims, in deciding the question of obviousness. The factual findings of the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the field of the invention, and the objective considerations, did not require "construction" of these claims as set forth in the *Markman* decisions of the Federal Circuit and the Supreme Court.

In reviewing the jury verdict of obviousness, we review whether the jury was correctly instructed on the law, and whether there was substantial evidence whereby a reasonable jury could have reached its verdict upon application of the correct law to the facts, *Railroad Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1512, 220 USPQ 929, 935-36 (Fed. Cir.), *cert. denied*, 469 U.S. 871 (1984), recognizing that invalidity must be proved by clear and convincing evidence. *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893, 221 USPQ 669, 673 (Fed. Cir. 1984). Thus we turn to the law, as presented at trial and as instructed by the trial judge.

The Jury Instructions

Jury instructions are reviewed for correctness, with due attention to their clarity, objectivity, and adequacy, taken as a whole. *See Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1570, 24 USPQ2d 1401, 1411 (Fed. Cir. 1992) ("The correctness of a jury instruction . . . is reviewed on appeal to determine whether, on the whole, the jury instructions were adequate to ensure that the jury fully understood the legal issues for each element of the case."); *Trademark Research Corp. v. Maxwell Online, Inc.*, 995 F.2d 326, 339 (2d Cir. 1993) ("A trial court's improper charge constitutes reversible error only 'when jury instructions, taken as a whole, give the jury a misleading impression or inadequate understanding of the law.' ") (quoting *Carvel Corp. v.*

Diversified Management Group, Inc., 930 F.2d 228, 232 (2d Cir. 1991)).

The jury was correctly instructed on the presumption of validity, and that Ethicon bore the burden of proving invalidity by clear and convincing evidence. The jury was correctly instructed that in determining whether the inventions of the '420 and '057 patents were invalid based on obviousness, it was necessary to consider the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, and the objective criteria of unobviousness. The court correctly explained the *Graham* factors. *See Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). For example, in determining the level of ordinary skill in the art the jury was instructed to consider

> evidence submitted by the parties to show:
>
> > One, the educational level of active workers in the field;
> >
> > Two, the types of problems encountered in the art;
> >
> > Three, the nature of the prior art solutions to those problems;
> >
> > Four, the activities of others;
> >
> > Five, the rapidity with which innovations are made in the art;
> >
> > And six, the sophistication of the technology involved.

The jury instructions included explanation of the principles to be applied in determining obviousness when the invention is a combination of prior art components. The court instructed that the prior art must show not only all of the elements of the claimed combination, but must contain some "teaching, suggestion or incentive" to a

person of ordinary skill to combine the known elements in the way that U.S. Surgical combined them:

> In order to prove obviousness, the defendants must prove, again by clear and convincing evidence, that one of ordinary skill in the art would have found in the prior art references some teaching, suggestion or incentive to combine the prior art references in the way that U.S. Surgical did in its invention.

The jury instructions stressed that the prior art, to be invalidating, must sufficiently teach or direct a person of ordinary skill how to obtain the result reached by the patentee:

> Additionally, if you do find a teaching in the prior art that would motivate one of ordinary skill in the prior art to make the clip applier claimed in the '057 and '420 patents, you must also determine whether there was sufficient teaching or direction in the prior art of how to obtain or build the claimed clip applier such that a person of ordinary skill in the art would have a reasonable likelihood of success in making the invention. In other words, in order to find obviousness, you must find not only that the prior art would teach one of ordinary skill to try the combination of known elements, but also that the prior art would sufficiently teach or direct one of ordinary skill how to obtain the desired result.

The jury was instructed that in determining obviousness it was to consider the claim as a whole, and that it did not suffice if the individual elements of the invention were known in the prior art:

> The reason you must consider the claim as a whole is because there is no dispute that U.S. Surgical's invention is comprised of individual elements which were known in the prior art. The fact that U.S.

> Surgical's inventions incorporate or combine elements already known in the prior art does not render its patents invalid. Patents can be granted on devices that contain a combination of various elements that are well known in the prior art. U.S. Surgical's claim is that it invented the combination of those elements for the first time in the endoscopic multiple clip applier claimed in the patents in suit.

The instructions on the law of obviousness occupied eight pages of trial transcript. They were correct in law, thorough, and clearly stated. U.S. Surgical now argues that other instructions that it requested should also have been given, and that their omission requires a new trial. The district court explained its denial of these requests in its opinion on the post-trial motions.

U.S. Surgical had requested that the court read to the jury the sentence of 35 U.S.C. § 103(a) that states: "Patentability shall not be negatived by the manner in which the invention was made," accompanied by the instruction that the jury should give no weight to Ethicon's evidence of "how long or short a time it took to make [the invention]" and "how obvious U.S. Surgical's invention may have seemed to U.S. Surgical's own inventors." The court denied the request. We do not discern reversible error in this denial, for the rejected instruction was encompassed in the instructions that were given, was the subject of expert testimony, and was included in the argument. The court did not commit error in denying an instruction that gave weight to one of the several aspects that were before the jury, and was reasonably viewed as cumulative in the context of the instructions that were given.

U.S. Surgical also requested an instruction that the '226 patent was cumulative prior art and thus did not have to be cited to the patent examiner. In its pre-trial con-

sideration of the issue of inequitable conduct the court, through a special master, had concluded that the '226 patent was cumulative in the circumstances and on the law that then applied in the examination of patents. Whatever the relevance of this point to the issue of inequitable conduct, which had been decided in favor of U.S. Surgical, the '226 patent was correctly treated as prior art in this litigation. The denial of this instruction is not grounds for a new trial.

U.S. Surgical also requested the instruction that even if the jury found the absence of the secondary consideration of long-felt need, that was "in no way suggestive of obviousness or invalidity." The instruction that was given on the secondary consideration was:

> In making these three determinations [the *Graham* factors] you must also consider other surrounding circumstances which are called secondary considerations. These include:
>
> One, whether the alleged invention was commercially successful;
>
> Two, whether the alleged invention satisfied a long-felt need in the art;
>
> Three, whether others were unsuccessful in making the alleged invention;
>
> Four, whether the alleged invention was copied by others in the art;
>
> Five, whether the alleged invention received praise from others in the art;
>
> Six, whether the alleged invention departed from other principles of the art.
>
> In order to determine that secondary considerations such as commercial success are evidence of non-

> obviousness, there must be a causal connection between the patented features of the invention and the commercial success of the device. If commercial success is attributable to the patented features, then it is evidence of non-obviousness.

U.S. Surgical's requested instruction concerning long-felt need related to the weight to be given to a fact whose existence, and significance, was disputed at trial. The issue of the objective factors was complex and hard-fought at trial, leaving areas of dispute, weight, and perhaps creditibility. We discern no error in the court's refusal to comment on a specific aspect, having instructed the jury on all aspects.

U.S. Surgical also requested the instruction that prior art that teaches away from the patented invention is evidence of nonobviousness. That subject was comprehended in the above-quoted instruction that the jury should consider "Six, whether the alleged invention departed from other principles of the art," an argument whose substance had been debated at trial. The refusal of this instruction, in light of the full instructions that were given, is not grounds for a new trial.

U.S. Surgical also states that the district court should have given a curative instruction to counter Ethicon's suggestion that the patents in suit improperly hindered competition. The record shows Ethicon's persistent and improper innuendos. However, U.S. Surgical reasonably countered this aspect with evidence and argument concerning the purpose of the patent system. Review of the record leads us to conclude, as apparently did the district court, that this tactic did not prejudice the outcome. *See City of New York v. Pullman, Inc.*, 662 F.2d 910, 917 (2d Cir. 1981) ("The district court is not obliged to charge every contention made by the parties at trial, as long as the charge itself, taken as a whole, is fundamentally

fair.") (citations omitted), *cert. denied*, 454 U.S. 1164 (1982). The denial of these instructions (and others offered by both sides) was not a miscarriage of justice, and does not establish reversible error or grounds for a new trial.

U.S. Surgical also argued that its requested instructions construing the claims should have been given, and that the absence of "claim construction" by the district court required a new trial. In accordance with the Court's remand for further consideration in light of *Markman*, we have again reviewed the requested instructions to determine whether any instructions that were improperly refused could reasonably have prejudiced the jury's verdict of invalidity.

In evaluating the refused instructions, we look first at the instructions on claim construction that were given. The issue was interpretation of these means-plus-function claims and their application to find if there was infringement by the Ethicon devices. The district court instructed the jury how to intepret means-plus-function claim elements, and how to apply these claim elements to the accused devices, as follows:

> Now, in interpreting the means plus function claim elements, you must determine the following:
>
> One, what function is called for by the claim element, and
>
> Two, what structure, or means, is described in the patent specifications for performing the stated function.
>
> A means plus function claim is only infringed if:
>
> One, the function of the accused device is identical to the function disclosed in the claim element of the patent; and

> Two, the structure which performs that function in the accused device is the same as, or the equivalent of, the structure described in the patent specifications.
>
> The second of these two steps requires you to determine whether the accused device includes the same structure as described in the patent or its equivalent. You may determine that a structure in the Ethicon device is equivalent if you determine that a person of ordinary skill in the art would consider the structure found in the accused device an insubstantial change from the structure disclosed in the patent specification.

This aspect did not concern, or determine, validity in this case. However, U.S. Surgical states that *Markman* requires the trial judge to perform the first portion of this instruction, that is, to determine the function and the structure or means that performs the function, and to give a detailed technical analysis for the infringement portion of the instruction; and that failure to do so fatally flawed the trial.

For example, U.S. Surgical requested instructions for the first element of claim 1 of the '057 patent, starting with the following proposed claim construction:

> Clause i) of claim element 1b) reads "means for storing a plurality of surgical clips." This is a means-plus-function claim element. The stated function, as I interpret it, is to store a plurality of surgical clips.

We observe that this part of the proposed claim construction merely repeats the words of the claim. The requested instruction then told the jury what structure was described in the patent specification for performing this function:

> The structure or means disclosed in the patent specification for performing this function is a clip track which holds an array of surgical clips and a spring to

> bias the clips toward the distal or far end of the instrument.

This information from the specification resolved no dispute, for there was none. Next, the requested instruction told the jury how to find infringement: the same instruction as in the general jury instruction that was actually given, quoted *supra*, but now drawn specifically to this claim element:

> In order to find that this claim element of the '057 patent has been met, you must first find that defendants' accused devices perform the function of storing a plurality of clips. Then you must find that the defendants' accused devices have a clip track which holds an array of surgical clips and a spring to bias the clips toward the distal or far end of the instrument, or equivalent structure, which performs this function.

This text, again, repeated the function in the same words as in the claim, and repeated the undisputed description in the specification. The requested instruction then stated that if the accused devices perform this function, using the described means or an equivalent means, there is infringement. That is the same instruction as in the general instruction that was actually given, but made specific to this claim element. We doubt that *Markman* requires the trial judge to instruct as to an undispted "claim construction" for every term, by simply parroting the words of the claim and then repeating the rule concerning infringement of means-plus-function claims. *Markman* explicitly recognized that the application of the claim to the accused device was for the jury. Indeed, Ethicon objected to this instruction as an improper attempt to direct the jury findings of infringement.

Similar instructions were proffered for the other claim elements. Another rejected instruction started with a

similar repetition of the words of the claim as "interperted" by the judge, and an undisputed restatement of what these words mean:

> The final clause of claim element b) ii) calls for "clip closing means for sequentially closing said surgical clips." This is a means-plus-function claim element. The stated function of this particular means-plus-function claim elements is "sequentially closing said surgical clips." I interpret this to mean the closing of surgical clips one at a time and one after the other.

In the infringement trial, the issue was not the definition of "sequentially," but the equivalency of the means that was described in the specification with the means that was used in the accused device, and issues concerning the clip advancing means. These aspects do not relate to obviousness, but to infringement. The additional text of this proposed instruction was objected to on its merits by Ethicon as an incorrect application of the law of 35 U.S.C. § 112 ¶ 6. However, this aspect raised no disputed issues with respect to the determination of obviousness in view of the prior art. The dispute concerning the requested instructions related not to the prior art, but to the accused Ethicon devices.

Following is another claim element whose proffered "interpretation" was to repeat the words of the claim:

> Claim element a) calls for a trocar having a cannula with valve means for sealing the cannula. The claim element "valve means for sealing said cannula" is a means-plus-function claim element. The stated function, as I interpret it, is to seal the cannula.

There were infringement disputes concerning the valve means, and there was much debate at trial concerning the scope of this claim element as applied to Ethicon's devices. U.S. Surgical requested the instruction that the

"valve means" includes and is infringed by all prior art valves and gaskets and any other known structures for sealing the cannula:

> The structure for performing this function includes all such structures contained in trocars known in the art at the time the '420 Patent Application was filed. Such trocars contain structures both to seal the cannula when no instrument is in the cannula, such as a flapper-type valve, and structures which form a seal between the instrument and the cannula when an instument is inserted in the cannula such as a gasket. The flapper valve may engage the gasket, as in the U.S. Surgical Surgiport Trocar, or be separate from the gasket, as in reusable instruments that were known at the time the '420 Patent Application was filed. Therefore, if you find that the Ethicon Endopath Trocar is a trocar having the same or equivalent structure to the structures I have just described, then the accused devices satisfy claim element a) of Claim 1 of the '420 Patent.

We referred *supra* to this requested instruction, for it makes clear that validity of the U.S. Surgical patents was not grounded on asserted unobviousness of the valve means, and that a reasonable jury could have so found. The district court had left to the jury the issue of breadth of the valve means as it affected infringement, for Ethicon had vigorously objected to this instruction as prejudging the finding of infringement. In his post-trial opinion, the district judge expressed the view that the jury had accepted U.S. Surgical's construction of the valve means since it found infringement of the '420 patent claim. We do not reach the issue of infringement. However, whether the valve means was construed as broadly as U.S. Surgical requested, or quite narrowly as Ethicon had argued, the variety of valve structures shown in the prior art was in accordance with the jury's finding of obviousness in light of the prior art.

The *Markman* decisions do not hold that the trial judge must repeat or restate every claim term in order to comply with the ruling that claim construction is for the court. Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy. Although claim construction may occasionally be necessary in obviousness determinations, when the meaning or scope of technical terms and words of art is unclear and in dispute and requires resolution in order to determine obviousness, in this case none of these rejected instructions was directed to, or has been shown reasonably to affect, the determination of obviousness.

Grounds for a new trial have not been shown. *See Santa Maria v. Metro-North Commuter R.R.*, 81 F.3d 265, 273 (2d Cir. 1996) ("A new trial must be granted if the court determines that 'the verdict is against the weight of the evidence, that the damages are excessive, or that, for other reasons, the trial was not fair to the party moving.' ") (quoting *Montgomery Ward & Co. v. Duncan* (311 U.S. 243, 251 (1940)); *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 626, 225 USPQ 634, 643 (Fed. Cir. 1985) ("If prejudicial error occurred, or if the verdict is against the clear weight of the evidence, as an alternative to judgment n.o.v. a new trial may be granted, in the discretion of the trial judge.") (citing *Fairmont Glass Works v. Cub Fork Coal Co.*, 287 U.S. 474 (1933)).

We have not been shown prejudicial error in the jury instructions, or that the verdict of obviousness is against the clear weight of the evidence, or that substantial justice requires that the trial be voided.

The Dictionary

During its deliberations the jury requested a dictionary and, over the objections of both parties, was provided one by the court. U.S. Surgical states this is reversible error, while Ethicon states that any error was harmless.

U.S. Surgical proposes that the jury might have used the dictionary to look up definitions on which it had been instructed by the court or that had been explained by witnesses, such as "presumption" or "obviousness." The jury was instructed, as the parties agreed, to consider the ordinary meaning of the language used in the claims. U.S. Surgical does not mention any terms that were used outside of their ordinary meaning. The district court pointed out in its post-trial opinion that the instruction to consider the ordinary meaning, and the general assumption that definitions in a standard dictionary are common knowledge with which the jury is charged, support the provision of the dictionary.

It is generally agreed that the provision of a dictionary to a jury, although not favored, is not grounds for a new trial. *See Wernsing v. General Motors Corp.*, 470 A.2d 802, 806 (Md. 1984) ("It appears to be the near universal consensus that a new trial is not awarded simply because a dictionary was before the jury.") (citing cases). U.S. Surgical offered no specifics as to words whose dictionary definitions may have adversely affected the verdict of obviousness. Instead, U.S. Surgical seeks a presumption of prejudice and an automatic new trial.

Both sides cite *United States v. Weiss*, 752 F.2d 777 (2d Cir. 1985), as stating the controlling law in the Second Circuit, and each side argues that *Weiss* supports its position. In *Weiss* a criminal defendant was convicted of mail fraud, perjury, and RICO violations, and the jury obtained accounting books without the judge's knowledge or consent. Although the Second Circuit stated that

"extra-record information that comes to the attention of a juror is presumptively prejudicial," 752 F.2d at 782-83, the court held that the trial judge's determination that the information had not prejudiced the defendant was not an abuse of discretion, and sustained the conviction.

U.S. Surgical argues that the practice of permitting the jury to have a dictionary would undermine the patentee's right to be its own lexicographer, and thus constitutes reversible error. However, U.S. Surgical does not direct us to any actual or reasonably possible prejudice, or any suggestion that the jury disregarded the court's instruction on the law of obviousness, or the plain meaning of the terms used in the claims and the prior art. Instead, U.S. Surgical argues that it was Ethicon's burden to establish that the jury did not misuse the dictionary, and that since that burden can not be met a new trial is required. However, the holding in *Weiss* was not for an automatic new trial. *Weiss* did not divest the trial judge of authority to decide whether the error, in that case viewed as juror misconduct, was in fact prejudicial.

The district court did not commit prejudicial error by providing the dictionary. A new trial on this ground is not warranted.

The Post-Trial Motions

Upon post-trial motions the district court, in a 34-page opinion, discussed validity and infringement. With respect to validity the court discussed the positions of the parties on the teachings of the prior art, the differences between the prior art and the patented inventions, and how the inventions as a whole would have been viewed by a person of ordinary skill in that art.

The district court summarized the evidence that the prior art would have suggested the combination claimed in the '420 patent. The court referred to Ethicon's posi-

tion that U.S. Surgical had adapted its own multiple clip applier to endoscopic use, and the testimony that the only significant difference from the prior art multiple clip applier was the elongation of the shaft and the seal, and that these were common to all endoscopic instruments.

The district court explained its conclusion that there was substantial evidence in support of the jury verdict of obviousness of the claims in suit. The court also explained its conclusion that the requirements of a new trial had not been met: that the verdict was not against the weight of evidence, that there was not a miscarriage of justice or prejudicial error during trial, or a seriously erroneous result.

The Motion Upon Remand

Folowing the remand from the Supreme Court to the Federal Court, U.S. Surgical moved this court to vacate the district court's judgment and order a new trial, on the ground that since the district court had not construed the claims as required by *Markman*, either before or after the jury rendered its verdict, there is nothing for the Federal Circuit to review on appeal. U.S. Surgical states that it is entitled to a new trial of all issues of validity and infringement except for the verdicts in its favor (infringement of the '420 patent and that there was not inequitable conduct) for which Ethicon did not petition for *certiorari*.

Ethicon, opposing the motion, points out that the district court, in its opinion on the post-trial motions, discussed the claim construction that the jury necessarily adopted on the two aspects of claim scope that were in genuine dispute as applied to the Ethicon devices. Ethicon points out that the district court stated that it agreed with the jury's necessary constructions with respect to the valve means and the clip advancing means, and that the court explained its reasons for sustaining the verdicts based on those constructions. Ethicon points out that under *Mark-*

man this court undertakes to perform any necessary claim construction *de novo*. Ethicon also points out that no disputed claim construction was material to the determination of obviousness.

Concerning U.S. Surgical's proposed instructions on claim construction, as we have discussed, whatever their applicability to the issues of infringement, their omission did not prejudice the issue of obviousness. *Markman* did not hold that the trial judge must always parse the claims for the jury, whether or not there is an issue in material dispute as to the meaning or scope of the claims. Neither this court nor the Supreme Court held that the trial judge must conduct such a rote exercise, on pain of having to retry the case.

Ethicon had objected to the substance of U.S. Surgical's proposed instructions, as well as asserting that they are unnecessary. We need not resolve this issue, for U.S. Surgical has not shown that there are unclear or ambiguous technical terms or words of art or related aspects of claim scope whose "construction" as requested by U.S. Surgical would negate the verdicts of obviousness. The jury was instructed, without objection, that the language of the claims was to have its plain meaning. There was no dispute as to the meaning of technical terms or words of art as used in either the prior art or the claims. The difference between the prior art and the claimed invention is a question of fact, *Graham*, 383 U.S. at 17, 148 USPQ at 467, and was not overruled by the Court's *Markman* decision.

U.S. Surgical argues that if the district court had construed the claims for the jury, the jury could not have reasonably accepted Ethicon's argument that U.S. Surgical had simply made known endoscopic adjustments in its prior art multiple clip applier. This went to the ultimate question of obviousness, which was decided by the jury upon finding and weighing and evaluating the factual

evidence of the *Graham* factors. U.S. Surgical does not explain how any reasonable claim construction that it requested would have deprived the verdict of obviouness of its support. Further, *Markman* does not authorize the trial judge to remove from the jury the factual findings required by *Graham*.

On careful consideration of the substance of the instructions on claim construction that the district court declined to give, and the instructions on the issue of obviousness, all in light of the particular issues in this case concerning the prior art, the claimed invention, and the Court's discussion in *Markman*, we conclude that the omission of the requested instructions did not prejudice the determination of obviousness. The criteria for grant of a new trial have not been met. *See Santa Maria*, 81 F.3d at 273; *Shatterproof Glass*, 758 F.2d at 626, 225 USPQ at 643 (new trial appropriate when there was prejudicial error, or when verdict against weight of the evidence).

Conclusion

On review of the proceedings at trial, we conclude that there was substantial evidence from which a reasonable jury could have held that the claimed subject matter would have been obvious to a person of ordinary skill in this field at the time the invention was made. The judgment of invalidity is affirmed.

The case was vigorously litigated with extensive testimony, physical exhibits, and argument. We have been directed to no unfairness or incompleteness or prejudice in the jury instruction with respect to obviousness. A new trial was properly denied.

Costs

Costs to Ethicon.

AFFIRMED; MOTION FOR NEW TRIAL DENIED

APPENDIX B

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

94-1386, -1419

U.S. SURGICAL

v.

ETHICON

ORDER

A combined petition for rehearing and suggestion for rehearing in banc having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the CROSS-APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the suggestion for rehearing in banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the suggestion for rehearing in banc be, and the same hereby is, DECLINED.

The mandate of the court will issue on June 6, 1997.

FOR THE COURT,
JAN HORBALY
Clerk

By /s/ Alex Van Veen
ALEX VAN VEEN
Staff Law Clerk

Dated: May 30, 1997

cc: WILLIAM E. MCDANIELS
DAVID F. DOBBINS

APPENDIX C

[Filed Feb. 18, 1994]

UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

Case No. 5:92CV-134(AVC)

UNITED STATES SURGICAL CORPORATION

v.

ETHICON and JOHNSON AND JOHNSON
HOSPITAL SERVICES, INC.

JUDGMENT

This action came before the Court for a trial by jury, Honorable Alfred V. Covello, United States District Judge presiding, and the issues having been duly tried and the jury having rendered its verdict,

It is ORDERED, ADJUDGED and DECREED that the judgment be and is hereby entered in favor of the defendants.

Dated at Hartford, Connecticut, this 17th day of February, 1994.

KEVIN F. ROWE
Clerk

By /s/ Robin D. Tabora
ROBIN D. TABORA
Deputy in Charge

APPENDIX D

[Filed Jun. 7, 1994]

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

Civ. No. 5:92CV00134(AVC)

UNITED STATES SURGICAL CORPORATION

vs.

ETHICON, INC. and JOHNSON & JOHNSON HOSPITAL SERVICES, INC.

RULING ON POSTTRIAL MOTIONS

This is a patent infringement action in which the plaintiff, United States Surgical Corporation (U.S. Surgical), claims that the Endoscopic Multiple Clip Applier (EMCA) and the Endoscopic Rotatable Clip Applier (ERCA) manufactured and sold by the defendants, Ethicon, Inc. and Johnson & Johnson Hospital Services (Ethicon), infringe upon claim 1 of the '420 patent [1] and claims 1, 2, and 7 of the '057 patent,[2] both owned by U.S. Surgical. On January 12, 1994, the parties tried to a jury the issue of liability. On February 16, 1994, the jury returned a verdict for Ethicon, finding: (1) that the ERCA and EMCA infringed upon claim 1 of the '420

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[1] Patent number 5,100,420, issued by the Patent and Trademark Office (PTO) to Green et al. (U.S. Surgical, assignee), on March 31, 1992.

[2] Patent number 5,084,057, issued by the PTO to Green et al. (U.S. Surgical, assignee) on January 8, 1992.

patent, both literally and under the doctrine of equivalents; (2) that the ERCA and EMCA did not infringe upon claims 1, 2, and 7 of the '057 patent; and (3) that claim 1 of the '420 patent, as well as claims 1, 2, and 7 of the '057 patent, were invalid due to obviousness. Accordingly, on February 18, 1994, the court rendered judgment for Ethicon.

U.S. Surgical now moves for judgment notwithstanding the verdict as to the jury's finding of non-infringement of claims 1, 2 and 7 of the '057 patent and as to the jury's finding of invalidity of each of the patent claims at issue. In the alternative, U.S. Surgical moves for a new trial as to those issues, asserting: (1) that the jury's verdict was contrary to the weight of the evidence; and (2) that legal error occurred at trial to U.S. Surgical's prejudice. Ethicon moves for judgment notwithstanding the verdict as to the jury's finding of infringement of claim 1 of the '420 patent, and, in the alternative, for a new trial on that issue.

FACTS

The evidence at trial established the following facts, which are recounted in brief.

The instruments at issue in this action are endoscopic multiple clip appliers, which are used to ligate, or close, internal vessels or arteries during endoscopic surgery. Endoscopic surgery is minimally invasive surgery where doctors perform the surgical operation through small incisions, using sealed tubes, or trocars, to facilitate the entry of surgical instruments into the patient's insufflated abdomen.[3] A tiny camera can also be inserted through the trocars. Surgeons manipulate the endoscopic instruments while monitoring their movements on a video screen.

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[3] Insufflation is the process by which gas is pressured into the abdomen, causing the abdominal cavity to expand, thereby creating a working space for the endoscopic surgeons.

Both U.S. Surgical and Ethicon manufacture surgical instruments, including instruments for endoscopic surgery. In 1966, U.S. Surgical received its first patents for mechanical wound closure devices.[4] By 1979, U.S. Surgical manufactured and sold automatic multiple clip appliers for use in open, or conventional, surgery.[5] Beginning in approximately 1980, Ethicon also manufactured and sold multiple clip appliers for conventional surgery. By July 1989, when U.S. Surgical applied for a patent for its endoscopic multiple clip applier, the Patent and Trademark Office (PTO) had issued at least 10 different patents for multiple clip appliers for conventional surgery. Several companies manufactured and sold approximately 40 different versions of the conventional multiple clip appliers.

As for clip appliers for use in endoscopic surgery, prior to January 1990, when U.S. Surgical introduced for commercial use its Endoclip endoscopic multiple clip applier, only single clip appliers were available for endoscopic surgery. Endoscopic single clip appliers had to be inserted and then withdrawn through a trocar in order to apply each surgical clip. By July 1989, the PTO had issued several patents for various single clip appliers for use in endoscopic surgery, and at least three different companies manufactured and sold different versions of an endoscopic single clip applier.

In mid-1987, U.S. Surgical began to develop a multiple clip applier for endoscopic surgery.[6] From approximately

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[4] Beginning in approximately 1966, U.S. Surgical began to manufacture and sell the first surgical clip appliers in the United States. The use of surgical clips eventually replaced, to a substantial degree, the use of sutures for ligation during surgery.

[5] In May 1979, the PTO issued to U.S. Surgical patent number 4,152,920, which disclosed a multiple clip applier for open surgery.

[6] As early as 1985, U.S. Surgical personnel had discussed the development of an endoscopic multiple clip applier, but significant design and engineering work did not begin until 1987.

May 1987 through July 1989, U.S. Surgical personnel developed and tested a multiple clip applier for endoscopic surgery. On July 18, 1989, U.S. Surgical applied for a patent for its endoscopic multiple clip applier, which application ultimately resulted in the issuance of the '420 patent. On May 30, 1990, U.S. Surgical filed a further patent application, a continuation in part of the July 18, 1989 application, which ultimately resulted in the issuance of the '057 patent. In January 1990, U.S. Surgical first made the Endoclip commercially available. On January 28, 1992, the PTO issued the '057 patent. On March 31, 1992, the PTO issued the '420 patent.

Prior to 1989, the use of endoscopic surgery was largely limited to gynecological surgery, specifically, the ligation of fallopian tubes. In October 1989, at the American College of Surgeons convention, U.S. Surgical, at their convention "booth", displayed on videotape an endoscopic gallbladder removal. The endoscopic gallbladder removal demonstrated at the convention employed various U.S. Surgical endoscopic instruments, including the Endoclip. The operation also employed micro-camera technology which allowed the surgeon to monitor his movements on a video screen. From approximately October 1989 through 1993, the use of endoscopic surgery for gall bladder removals increased dramatically.[7] With the increase in endoscopic surgical procedures, the U.S. Surgical Endoclip achieved considerable commercial success.

On or about May 1990, Ethicon began to develop its own endoscopic multiple clip applier. In July 1991, Ethi-

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[7] At trial, the parties and their witnesses contested the reasons underlying the huge increase in the use of endoscopic surgery. Ethicon presented expert testimony that the "endoscopic revolution" was best attributed to the micro-camera technology which allowed the precise endoscopic procedures to be monitored by the surgeon, as first demonstrated at the October 1989 American college of Surgeons convention. U.S. Surgical, on the other hand, attributed the increase in endoscopic gallbladder removals to the availability of its endoscopic multiple clip applier.

con made the EMCA commercially available. In October 1991, Ethicon made the ERCA commercially available. On March 10, 1992, U.S. Surgical initiated this action, alleging patent infringement, claiming that Ethicon's EMCA and ERCA infringed upon the '057 and '420 patents.

At trial, U.S. Surgical presented evidence concerning its development of its endoscopic multiple clip applier, the prosecution and granting of the '057 and '420 patents, and the success of the commercial embodiments of the U.S. Surgical invention. U.S. Surgical also presented the testimony of both a mechanical expert, Stephen Tricamo, and a patent law expert, Rene Tegtmeyer, concerning: (1) their interpretation of the patent claims at issue; (2) their conclusions that the EMCA and ERCA infringe upon the patent claims at issue, and their analysis supporting that conclusion; and (3) their conclusions that the U.S. Surgical patents were valid. Ethicon presented evidence concerning its development of the EMCA and ERCA, as well as evidence concerning prior art relevant to the field of endoscopic surgical instruments. Ethicon also presented expert testimony from a mechanical expert, Robert Mann, and a patent law expert, James Ryther, concerning: (1) their interpretation of the patent claims at issue; (2) their conclusions that the EMCA and ERCA do not infringe upon the U.S. Surgical patent claims, and their analysis supporting that conclusion; and (3) their conclusions, based on the prior art, that the U.S. Surgical patents were invalid due to obviousness.

On February 16, 1994, the jury returned its verdict for Ethicon.

STANDARD

In order to succeed on a motion for judgment notwithstanding the verdict (JNOV), the moving party must establish that the jury's findings are not supported by substantial evidence in the record. F.R.C.P. 50(a)-(b).

"Substantial evidence is more than a mere scintilla. It means such evidence as a reasonable mind might accept as adequate to support a conclusion." *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 859 (Fed. Cir. 1991), *cert. denied*, 112 S.Ct. 2957 (1992), *quoting Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938). Further, the court must determine whether the jury's "findings can support the legal conclusions necessarily drawn by the jury in accord with its instructions enroute to its verdict." *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir.), *cert. denied*, 469 U.S. 857 (1984). In determining a motion for JNOV, the court must: "(1) consider all the evidence; (2) in a light most favorable to the non-mover; (3) drawing reasonable inferences favorable to the non-mover; (4) without determining credibility of witnesses; and (5) without substituting its choice for that of the jury between conflicting testimony." *Medtronic Inc. v. Intermedics, Inc.*, 799 F.2d 734, 742 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1033 (1987), *citing Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1547 (Fed. Cir. 1983).

The court, in its discretion, may grant a motion for a new trial brought pursuant to F.R.C.P. 59 if it concludes that: (1) "the verdict is against the weight of the evidence," *New Idea Farm Equip. Corp. v. Sperry Corp.*, 916 F.2d 1561, 1565 (Fed. Cir. 1990); (2) prejudicial error occurred during trial, *id.*; or (3) substantial justice has not been done, *Hugh v. Jacobs*, 961 F.2d 359, 365 (2d Cir. 1992). 11 C. Wright & A. Miller, Federal Practice & Procedure § 2803, at 32 (1973 & Supp. 1986). "A district court ordinarily should not grant a new trial unless it is convinced that the jury reached a seriously erroneous result or that the verdict is a miscarriage of justice." *Hugh*, 961 F.2d at 365. In determining whether the verdict is against the weight of the evidence, the court "has wide discretion and may consider the credibility of witnesses and [independently]

weigh the evidence." *Moxness Prods., Inc. v. Xomed, Inc.*, 891 F.2d 890, 893 (Fed. Cir. 1989).

DISCUSSION

A. Patent Infringement

In order to determine patent infringement, both literally and under the doctrine of equivalents, the court instructed the jury to compare the EMCA/ERCA with the patent claims at issue. Because the parties disputed the meaning of the patent claims and presented conflicting evidence on their proper interpretation, thereby creating "an underlying factual question," the court instructed the jury to interpret the claims "en route to deciding the issue of infringement." *Tol-o-matic v. Proma Produkt-Und Marketing*, 945 F.2d 1546, 1550 (Fed. Cir. 1991) ("The interpretation of claims is defined as a matter of law based on underlying facts.").[8] Therefore, in addition to reviewing, for substantial evidence, the jury's factual findings concerning infringement, the court, upon motion for JNOV, will review the jury's verdict "to ascertain whether reasonable jurors could have interpreted the claim[s] in such a way that supports the verdict." *Id.* (citing cases). "In moving to set aside the jury's [infringement] verdict, [the movant] must show either that the jury's findings of disputed material facts are not supported by substantial evidence, or that those findings cannot support the legal conclusions to be implied from the verdict." *Mars, Inc. v. Conlux USA Corp.*, 818 F. Supp. 707, 711 (D. Del. 1993) (citing *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir.), *cert. denied*, 469 U.S. 857 (1984)).

Here, in their motions for JNOV, both parties challenge that portion of the jury's infringement verdict adverse to its position at trial.

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[8] *See* discussion, *infra* § C.1.

1. *Infringement of Claim 1 of the '420 Patent*

Claim 1 of the '420 patent is a combination claim which describes, in pertinent part, an endoscopic clip applier which includes "a plurality of surgical clips" and a "clip closing means for sequentially closing said surgical clips," to be used in combination with a trocar, which includes a "valve means for sealing" the cannula of the trocar.

Ethicon contends that, as a matter of law, the EMCA and ERCA do not infringe upon claim 1 of the '420 patent. Ethicon argues that the Ethicon clip applier (EMCA/ERCA) and Ethicon Endopath trocar do not include every element of claim 1, because: (1) the Ethicon devices do not include the "valve means for sealing" described in the claim; and (2) the Ethicon EMCA and ERCA do not "sequentially close clips" within the meaning of the claim. Ethicon also contends that U.S. Surgical failed to prove infringement under the doctrine of equivalents.

a. *"valve means for sealing said cannula"; "said endoscopic portion being insertable into said cannula through said valve means in sealing engagement therewith."*

Ethicon contends that the interpretation of the "valve means" claim limitation was not in dispute at trial, and that, "whether viewed as a means-plus-function element or a structure element," the language of the claim "as a matter of law requires the valve in the trocar cannula to be in sealing engagement with the clip applier." [9] Ethicon

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[9] Ethicon Memorandum in Support of Motion for JNOV, at 4. At trial, Ethicon successfully argued that the meaning of the patent claims in this action was in dispute and that the interpretation of the claims was to be submitted to the jury. In its motion for JNOV, Ethicon nonetheless contends that the meaning of

argues that the Endopath trocar has both a flapper valve, which seals the cannula only when there is no instrument in the cannula, and a gasket, which seals the cannula when the EMCA/ERCA is inserted. Because the claim requires that the clip applier be "insertable through said valve means in sealing engagement therewith," Ethicon argues that its device does not infringe because the *valve* in the Ethicon trocar is never in sealing engagement with the clip applier.

U.S. Surgical, in response, asserts that Ethicon's argument—that the Endopath *valve* is not in sealing engagement with the clip applier—requires the court to ignore the actual language of the claim. The language of claim 1 requires that the clip applier be in sealing engagement with "the valve means," not the valve. U.S. Surgical contends that substantial evidence at trial supported the contention that the "valve means" claim language describes generally the structures used to prevent gas leakage which instruments are inserted or withdrawn through the trocar, not only a valve. Therefore, the "valve means" in Ethicon's trocar consist of both the flapper valve, and the gasket.

The court agrees. Substantial evidence at trial supported the conclusion that the claim language "through said valve means in sealing engagement therewith" did not require the inserted clip applier to be in sealing engagement with the flipper valve in the Ethicon trocar, Rather, the clip applier, in order to infringe, must be in sealing engagement with the Ethicon trocar's "valve means," which includes both the valve and the gasket. Substantial evidence supports the jury's conclusion that

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certain claim language was not in dispute, and that the court was required to instruct the jury on the meaning of those terms. Ethicon did not request any such instruction to the jury on the interpretation of claims at any time prior to its motion for JNOV. The posttrial briefs in this action indicate that Ethicon's new and inconsistent position is incorrect. *See infra* § C.1.

the Ethicon trocar and EMCA/ERCA infringed the "valve means" claim element.

b. *"an endoscopic clip applier having" "clip closing means for sequentially closing [a plurality of] surgical clips"*

Although Ethicon requested at trial that the court submit to the jury the issue of claim interpretation, it now asserts that, as a matter of law, the "means for sequentially closing" clips must be construed to incorporate the clip advancing means disclosed in U.S. Surgical's patent specifications. Unlike the other patent claims at issue, claim 1 of the '420 patent does not include any claim limitation concerning the means for advancing surgical clips through the endoscopic shaft to the jaws which fasten the clips.[10] Rather, claim 1 of the '420 patent describes the combination of a trocar and an endoscopic clip applier that includes: (1) a frame; (2) a plurality of surgical clips disposed in any array and clip closing means for sequentially closing clips; and (3) a seal means. Ethicon argues that the clip advancing means described elsewhere in the '420 patent must be implied as a claim limitation inherent in claim 1.[11] Implying that

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[10] Each of claims 1, 2 and 7 of the '057 patent include claim limitations concerning the means for advancing surgical clips. *See* claim 1, '057 patent ("(b)(ii) means for individually advancing said clips to the distal portion of said endoscopic means for positioning adjacent the body tissue to be clipped"); claim 2 (dependent claim which incorporates the limitations of claim 1, above); claim 7 ("(b)(iii) means for individually advancing said clips distally for positioning within said pair of jaws to be postioned adjacent the body tissue to be clipped"). Accordingly, the jury found infringement of claim 1 of the '420 patent, but non-infringement as to each claim of the '057 patent.

[11] Ethicon argues that the clip advancing means is implied in claim 1 because: (1) a clip advancing structure is necessary in order to fulfill the essential function of the instrument described—to place numerous surgical clips during a single entry through a cannula; and (2) the use of the word "sequentially" in claim 1

the clip advancing means is a limitation to claim 1, Ethicon contends that the advancing means in the EMCA/ERCA are not the equivalent of the advancing means disclosed in the specifications of the '420 patent. Ethicon further asserts that the clip closing means—or "jaws"—in the EMCA/ERCA are not the equivalent of the jaws disclosed in the '420 patent.[12]

U.S. Surgical, in response, contends that substantial evidence supported the jury's conclusion that the clip advancing means of the patented device were not an inherent claim limitation of claim 1 of the '420 patent, notwithstanding the use of the word "sequentially" in the patent claim. Further, U.S. Surgical argues that substantial evidence supported the jury's conclusion that the jaws of the ERCA/EMCA are equivalent in structure to the jaws disclosed in the '420 specification.

The court concludes that substantial evidence supported both the jury's interpretation of this claim element and the jury's conclusion that the EMCA/ERCA infringed upon this claim element. The jury's finding, implicit in its verdict on infringement, that claim 1 of the '420 patent did not include clip advancing means, is supported by substantial evidence. U.S. Surgical presented substantial evidence concerning the patent's prosecution history, as well as expert testimony, that support the jury's interpretation of "clip closing means." The court concludes that

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references the "sequence" described throughout the '420 patent and the '057 patent, such sequence including the advancement of clips into the jaws of the clip applier.

[12] In support of its contention that the EMCA/ERCA does not satisfy the claim limitations of this claim element, Ethicon also asserts: (1) that the EMCA/ERCA does not perform the disclosed function of "sequentially closing" multiple clips, because the word "sequential" implicitly requires semi-automatic operation as a claim limitation; and (2) that the "issuance of Ethicon's '247 and '249 patents in and of itself requires a finding of non-infringement of the clip closing means." The court concludes that these grounds for JNOV lack merit.

the jury correctly interpreted this claim, so as not to include "clip advancing means" as an implicit limitation of claim 1. Accordingly, the determination of infringement of claim 1 does not require a finding that the EMCA/ERCA's clip advancing means were equivalent to those disclosed in the '420 patent.

The court further concludes that substantial evidence supported the jury's finding that the EMCA/ERCA jaws were equivalent to the jaws disclosed in the '420 patent specification. The evidence established that the Ethicon jaws were narrower so as to fit through a cannula without closing. The fact that the Ethicon jaws performed slightly differently, or performed an additional function (insertion without closing), does not negate infringement of the patented claim. *See, e.g., Texas Instruments v. U.S. Intern. Trade Com'n*, 805 F.2d 1558, 1563-64 (Fed. Cir. 1986); *Amstar Corp. v. Envirotech Corp.*, 730 F.2d 1476, 1482 (Fed. Cir.) (quoting *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F.2d 381, 402 (10th Cir. 1965), *cert. denied*, 383 U.S. 933 (1966)) ("infringement cannot be avoided by the mere fact that the accused device is more or less efficient or performs additional functions"), *cert. denied*, 469 U.S. 924 (1984).

c. *Infringement under the Doctrine of Equivalents*

Ethicon also moves for JNOV concerns the jury's verdict of infringement under the doctrine of equivalents. As to claim 1 of the '420 patent, the jury found that the Ethicon EMCA/ERCA and Endopath trocar performed the same function, in the same way, and to achieve the same result, as the invention in claim 1 of the '420 patent.

Ethicon first contends that, as a matter of law, the court should not have allowed the jury to consider the issue of infringement under the doctrine of equivalents. As it did at trial, Ethicon argues that the "application

[of the doctrine of equivalents] was not appropriate unless the court made a threshold finding that Ethicon copied or stole the patented invention or otherwise perpetrated a fraud on the patent." The cases upon which Ethicon relies do not support the rule proposed.[13] Although the doctrine of equivalents should not be "simply the second prong of every infringement charge," *Charles Greiner & Co. v. Mari-Med Mfg., Inc.*, 962 F.2d 1031, 1036 (Fed. Cir. 1992), quoting *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991), it should be applied to ensure that one does not avoid infringement by making only "an insubstantial change

[13] The Federal Circuit cases cited by Ethicon do not support the proposition that the trial court must make a threshold determination of copying or misappropriation before submitting the doctrine of equivalents to the jury, or before entering a judgment under the doctrine of equivalents. In *Charles Greiner & Co. v. Mari-Med Mfg. Inc.*, 962 F.2d 1031, 1035-37 (Fed. Cir. 1992), the Federal Circuit discussed the equitable origin of the doctrine of equivalents, which is designed to prevent "fraud on the patent," and also stated that the doctrine must not be applied in a way that ignores the legal significance of claim limitations. In *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991), the court, in affirming the district court's summary judgment ruling, stated that the doctrine of equivalents should not operate to expand the protective scope of patent claims. The court also noted that the doctrine is designed to prevent infringers who "merely make[] an insubstantial change [to a patented device]." *Id.* In *Valmont Indus., Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1043 (Fed. Cir. 1993), which also did not involve a jury trial, the court stated: "[T]he Supreme Court refused to allow an 'unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim.' (citing *Graver Tank*, 339 U.S. at 607 (1950)). This statement elucidates both the purpose of the doctrine and the type of conduct which triggers its application. An equivalent under the doctrine of equivalents results from an insubstantial change which, from the perspective of one of ordinary skill in the art, adds nothing of significance to the claimed invention." Here, the court concluded that the evidence in this case sufficiently "triggered" the doctrine of equivalents, and instructed the jury on both the purpose of the doctrine and how to apply it.

which, from the perspective of one of ordinary skill in the art, adds nothing of significance to the claimed invention." *Valmont Indus., Inc. v. Reinke Mfg. Co., Inc.*, 983 F.2d 1039, 1043 (Fed. Cir. 1993). The jury properly considered infringement under the doctrine of equivalents in this case.

Ethicon contends that the sealing structures in its trocar—the valve and gasket—perform a function different from the patented invention, and do so in a different way. Ethicon argues that the jury could only conclude that its valve and gasket was a substantially equivalent "valve means" if it ignored the claim limitation, i.e., "*valve* means." Further, Ethicon asserts that U.S. Surgical failed to adduce evidence to support a particularized showing as to "how" and "why" the Ethicon devices performed in a substantially similar "way" as the patented invention.

For the reasons discussed above, *supra* § A.1.a, the court rejects Ethicon's contention that the Ethicon valve and gasket perform a substantially different function, in a different way, than the "valve means" described in claim 1. Further, the record discloses that U.S. Surgical adduced substantial evidence at trial concerning how and why the Ethicon devices performed in the same way as the patented invention. It was proper for certain witnesses to explain how the "way" prong of the doctrine of equivalents was satisfied by referring to earlier testimony pertaining to literal infringement analyses, provided that there was "testimony explicitly comparing the claimed and accused devices as to all three elements of equivalents." *Lear Siegler, Inc. v. Sealy Mattress Co. of Mich.*, 873 F.2d 1422, 1426 (Fed. Cir. 1989) (party asserting infringement must present evidence and argument concerning the doctrine and each of its elements).

Accordingly, the court concludes that substantial evidence supported the jury's conclusion that claim 1 of the '420 patent was infringed under the doctrine of equiva-

lents. Further, "in the interest of judicial economy and conservation of the parties' resources," the court will permit the jury's verdicts of both literal infringement and infringement under the doctrine of equivalents to stand pending appeal. *See, e.g., Goodwill Constr. Co. v. Beers Constr. Co.*, 991 F.2d 751, 754 (Fed. Cir. 1993).

Because the record provides substantial support for the jury's finding of infringement of Claim 1 of the '420 patent, both literally and pursuant to the doctrine of equivalents, as discussed above, the court denies Ethicon's motion for JNOV. The court also denies Ethicon's motion for a new trial on the issue of infringement of claim 1 of the '420 patent.

2. *Verdict of Non-infringement of Claims 1, 2, and 7 of the '057 patent*

U.S. Surgical moves for JNOV, or in the alternative, for a new trial, as to the jury's verdict that claims 1, 2, and 7 of the '057 patent were not infringed.

Claims 1, 2, and 7 of the '057 patent each disclose an endoscopic multiple clip applier. As discussed above, claims 1, 2, and 7 of the '057 patent each contain at least one critical claim element which is not contained in claim 1 of the '420 patent. Each claim includes a means-plus-function claim element concerning the means for individually advancing multiple surgical clips through the endoscopic section of the clip applier and into a pair of jaws at the end of the instrument.[14] Because of these

[14] Specifically, claim 1 of the '057 patent discloses an endoscopic multiple clip applier, that includes: "ii) means for individually advancing [multiple] clips to the distal portion of said endoscopic means for positioning adjacent to the body tissue to be clipped;" and "iii) means for at least partially closing each said clip at least sufficient to grip at least sufficient to grip the body tissue after the clip has been advanced distally to said distal portion of said endoscopic means." Claim 2 is a dependent claim, which incorporates all of the claim elements of claim 1, including those quoted above. Claim 7 discloses a disposable endoscopic multiple

clip-advancing claim elements, in order for the jury to conclude that claims 1, 2, and 7 were infringed, it had to find that: (1) the EMCA/ERCA performs the identical function called for by the claim element (individually advancing clips into the jaws); *and* (2) the structures which perform that function in the EMCA/ERCA are identical to, or the equivalent of, the structures described in the U.S. Surgical patent specifications to perform that function. 35 U.S.C. § 112; *Valmont Indus.*, 983 F.2d at 1042.

Both U.S. Surgical and Ethicon presented considerable evidence concerning the strictures disclosed in the U.S. Surgical patents that performed the clip advancing function, and whether the clip advancing structures in the ERCA/EMCA constituted "the equivalent" of those structures.[15] Substantial evidence in the record supports the jury's finding that the EMCA/ERCA's clip advancing structures were not the equivalent of the structures disclosed in the U.S. Surgical patents to perform the function of advancing clips.[16] Accordingly, U.S. Surgical's motion for JNOV as to infringement of claims 1, 2, and

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clip applier, that includes: "iii) means for individually advancing [multiple] clips distally for positioning within said pair of jaws to be positioned adjacent the body tissue to be clipped;" and "iv) means for at least partially closing said jaws about each said clip to close said clips at least partially about the body tissue."

[15] For example, Ethicon's witnesses contended that its "fully automatic" clip advancing structures were not the equivalent of the "semi-automatic" structures disclosed in U.S. Surgical's patents specifications. U.S. Surgical's witnesses disagreed. Ethicon's witnesses contended that the EMCA/ERCA clip advancing means, which included a "feed bar, two plane clip track, lifter spring, and escapement" were not the equivalent of the one plane pusher bar disclosed in the U.S. Surgical patent. U.S. Surgical's witnesses disagreed.

[16] This finding alone mandates a verdict of non-infringement. The court does not address other methods by which the jury could have determined the non-infringement of claims 1, 2, and 7 of the '057 patent.

7 of the '057 patent, both literally and under the doctrine of equivalents, is denied. The court also denies U.S. Surgical's motion for a new trial on this issue.

B. Patent Invalidity

Pursuant to 35 U.S.C. § 103, an "obvious" patent claim is invalid and unenforceable. A patent claim is obvious if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103. The determination of obviousness is classified as a legal conclusion that relies on a number of "factual underpinnings," [17] namely: (1) the scope and content of the prior art at the time of the invention; (2) the differences between the prior art and the patent claims at issue; and (3) the level of ordinary skill in the art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). "Secondary considerations," including commercial success, long-felt but unsolved need, and failure to others to attain the invention, may also be relevant to the obviousness determination. *Id.* at 17-18. When the "factual underpinnings" are in dispute, as in this action, the issue of obviousness is properly submitted to the jury. *E.g.*, *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993).

Here, the jury considered the differences between the prior art and the patent claim and concluded that the subject matter of the patent claim would have been obvious to a person of ordinary skill in the art at the time of the invention. *See* 35 U.S.C. § 103. The court reviews the jury's finding of obviousness to determine whether the factual findings implicit in the jury's verdict are

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[17] *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993); *See also Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966) (referring to obviousness as a question of law based upon "several basic factual inquiries").

supported by substantial evidence. *E.g., Jurgens v. McKasy*, 927 F.2d 1552, 1558 (Fed. Cir.), *cert. denied*, 112 S. Ct. 281 (1991) ("When the *Graham* factual underpinnings have been genuinely disputed . . . we presume that the jury resolved them in favor of the verdict winner."); *see also Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1988) ("Judges must accept the factual findings, presumed from a favorable jury verdict, which are supported under a substantial evidence/reasonable juror standard."), *cert. denied*, 493 U.S. 814 (1989).[18]

1. *Invalidity of Claim 1 of the '420 patent*

U.S. Surgical correctly asserts that in order for the jury to find that claim 1 of the '420 patent, a combination patent claim, was obvious, the jury had to find: (1) that the prior art would have taught or suggested, to the person of ordinary skill, the combination of individual elements found in the patented device, *e.g., Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 293, 297 & n. 24 (Fed. Cir. 1985) (where party asserting invalidity relies on combination of prior art references, it must show teaching or suggestion in those references which support their use in combination), *cert. denied*, 475 U.S. 1017 (1986); and (2) that the prior art would sufficiently teach or direct one of ordinary skill "how to obtain the desired result." *In re Eli Lilly & Co.*, 902 F.2d 943, 945 (Fed. Cir. 1990); *See Gillette Co. v. S.C. Johnson & Son, Inc.*, 919 F.2d 720, 724-25 (Fed. Cir. 1990). U.S. Surgical argues that Ethicon failed to adduce substantial evidence to support, by clear and convincing evidence, the jury's findings: (1)

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[18] In reviewing the obviousness verdict, the court does not "lose sight of the presumption of [patent] validity," *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir. 1984), and takes into account the clear and convincing standard of proof required to prove obviousness. *Id.*

that the prior art taught or suggested the desirability of the U.S. Surgical invention; or (2) that the prior art would teach one of ordinary skill how to obtain the claimed invention. U.S. Surgical contends, as to these requirements, that Ethicon relied on only four pieces of prior art—the Green '226 patent, the Polk '239 patent, Yoon's 1987 abandoned patent application, and the Bonnet '965 patent—and that this prior art did not constitute substantial evidence.

Ethicon, in response, asserts that in order to prove obviousness, it relied on a large number of prior art references, particularly the large body of prior art concerning multiple clip appliers for conventional surgery and clip appliers. Ethicon argues that the only difference between the U.S. Surgical invention and the multiple clip appliers in the prior art was the invention's longer shaft and seal. These attributes, Ethicon argues, were obviously necessary for any endoscopic instrument, as demonstrated by the prior art in the endoscopic field. Further, Ethicon contends that it adduced substantial evidence in support of the specific finding that the prior art taught or suggested the desirability of the claimed invention, *and* how to obtain it.

Evidence at trial established that the field of multiple clip appliers for conventional surgery was a highly developed and crowded field of art at the time of U.S. Surgical's invention. By 1989, numerous companies manufactured and sold approximately forty different multiple clip appliers for open surgery. Several of the multiple clip appliers in the prior art included many of the same general features of the U.S. Surgical invention, i.e., a frame, a shaft, camming jaws, bias spring, pusher bar, and escapements.[10] Although this multiple clip applier

[10] Prior art conventional clip appliers with these features included the Premium Surgiclip, disclosed in the Green '226 patent, and the Davis & Geck Multiclip, disclosed in the Montgomery '373 patent.

prior art did not contain the mechanical qualities necessary for endoscopic instruments, the prior art also included a variety of endoscopic instruments, including endoscopic single clip appliers. Ethicon adduced evidence at trial that the only difference between the multiple clip applier prior art and the invention was that the invention was sealed and had a longer shaft. Ethicon argued that this difference made the invention obvious because the incorporation of a longer shaft and seal into the conventional multiple clip applier technology was obvious, considering the prior art in endoscopy. Ethicon's experts also testified that the prior art would have given a person of ordinary skill in the art a suggestion, incentive, or motivation to make the claimed invention.[20]

The jury concluded that, given the difference between the prior art and the invention, the invention would have been obvious to the person of ordinary skill in the field; that the prior art taught or suggested the combination of elements found in the invention;[21] and that the prior art also provided sufficient instruction how to obtain the invention.[22] These conclusions, the "factual underpinnings" of the determination of obviousness, are factual findings, *see Bio-rad Laboratories v. Nicolet Instrument Corp.*, 739 F.2d 604, 611 (Fed. Cir.), *cert. denied*, 469 U.S. 1038

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[20] *E.g.*, Transcript at 2238, 2332-33.

[21] U.S. Surgical "has not shown that reasonable jurors could not agree with [Ethicon's experts]" as to the prior art teaching the desirability of the invention. *See Bio-rad Laboratories v. Nicolet Instrument Corp.*, 739 F.2d 604, 611 (Fed. Cir.), *cert. denied*, 469 U.S. 1038 (1984).

[22] As to the requirement that the prior art provide a skilled person a "reasonable expectation of success" in obtaining the invention, the prior art evidence concerning multiple clip appliers and endoscopic instruments, and the testimony of inventors and experts concerning what that prior art taught as to how to build an endoscopic multiple clip applier, constitutes substantial evidence to support the jury's finding.

(1984), which the court will not upset unless a reasonable jurior could not have so found. *Newell Cos.*, 864 F.2d at 765.[23] The court concludes that substantial evidence in the record supported the jury's factual findings in support of its verdict on obviousness. Accordingly, the motion for JNOV as to the obviousness of claim 1 of the '420 patent is denied. The court also denies U.S. Surgical's motion for a new trial on this issue.

2. *Invalidity of Claims 1, 2, and 7 of the '057 patent*

U.S. Surgical moves for JNOV, or, in the alternative, for a new trial as to the jury's conclusion that claims 1, 2, and 7 of the '057 patent, which were found not to be infringed by the EMCA/ERCA, were obvious. U.S. Surgical asserts that the jury's verdict as to these claims, i.e., noninfringement coupled with invalidity, is inconsistent, and a result that was not advocated by either party nor supported by sufficient evidence.[24]

In *Cardinal Chemical Co. v. Morton Intern., Inc.*, 113 S. Ct. 1967 (1993), the Supreme Court recognized that the infringement and validity inquiries are independent:

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[23] In *Bio-rad Laboratories*, the court explained the role of the jury in determining obviousness: "This excerpt from [expert] testimony . . . illustrate[s] the importance of the jury's role in ascertaining the content of the prior art. The jurors must discern how a person of ordinary skill in the art would have interpreted available art at the time the invention was made. The factfinder's interpretation of prior art references is necessarily guided by the credibility given the testimony of experts." *Bio-rad Laboratories* 739 F.2d at 611.

[24] Ethicon's contention that U.S. Surgical waived its right to move for JNOV as to infringement of their patents by failing to move for a directed verdict at the close of the case lacks merit. On February 9, 1994, U.S. Surgical filed a written motion for judgment as a matter of law on the issues of infringement and validity.

> [O]ur prior cases have identified a strong public interest in the finality of judgments in patent litigation. . . [W]e approved of the District Court's decision to consider the question of validity even though it had found that a patent had not been infringed. . . . [W]e stated that "of the two questions, validity has the greater public importance. . . . and the District Court in this case followed what will usually be the better practice by inquiring fully into the validity of this patent."

Id. at 1977 (citations omitted) (overruling Federal Circuit's practice of routinely vacating judgments of validity after finding noninfringement). Accordingly, in this case the court instructed the jury to determine patent validity even if it found noninfringement. The jury was not required to adopt entirely the position of one party or the other, or accept the entire testimony of a given expert. Upon motion for JNOV, "[w]here there is a view of the case that makes the juries answers to special interrogatories consistent, they must be resolved that way." *Allen Organ Co. v. Kimball Int'l, Inc.*, 839 F.2d 1556, 1563 (Fed. Cir.), *cert. denied*, 488 U.S. 850 (1988).[25] Here, the court concludes that the jury's conclusions as to infringement and validity can be harmonized with the evidence presented, and that substantial evidence in the record supports the court's conclusion of invalidity of claims 1, 2, and 7 of the '057 patent.

Accordingly, the motion for JNOV as to the validity of claims 1, 2 and 7 of the '057 patent is denied. The court also denies the motion for a new trial on this issue.

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[25] The Second Circuit has stated: "A district court has a duty to reconcile the jury's answers on a special verdict form with any reasonable theory consistent with the evidence, and to attempt to harmonize the answers if possible under a fair reading of those answers." *McGuire v. Russell Miller, Inc.*, 1 F.3d 1306, 1311 (2d Cir. 1993).

C. Motions for New Trial

1. *Interpretation of Claims by the Jury*

At trial, U.S. Surgical urged the court to instruct the jury on the meaning of the four patent claims at issue.[26] Ethicon, in response, argued that, because the parties intensely disputed the meaning of the claims and because the parties presented conflicting extrinsic evidence concerning the meaning of the claim, the court should submit the issue of claim interpretation to the jury to decide in its determination of infringement. The court instructed the jury to determine the meaning of the patent claims. U.S. Surgical now claims that the court's failure to instruct the jury on the meaning of each patent claim at issue constitutes error which requires a new trial.

U.S. Surgical asserts that the construction of patent claims is an issue of law, which the court may submit to the jury only where a "disputed issue of fact" arises in connection with the interpretation of a term in a claim. Notwithstanding the diametrically opposed testimony of the parties' mechanical experts and legal experts as to the meaning of the U.S. Surgical patent claims, U.S. Surgical contends that no factual dispute existed as to the meaning of the patent claims in this action.

The Federal Circuit, on numerous occasions, has stated that, "[c]laim interpertation is a question of law for the court." *Read v. Portec Inc.*, 970 F.2d 816, 822 (Fed. Cir. 1992); *Associated Equipment Corp. v. Authorized Motor Parts Corp.*, 27 U.S.P.Q.2d 1784, 1785 (Fed. Cir. 1993); *Structural Rubber Prods. v. Park Rubber Co.*, 749 F.2d 707, 721 (Fed. Cir. 1984). However, a similarly long line of Federal Circuit cases maintains that: "[W]hen the meaning of a term in the claim is disrupted

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[26] U.S. Surgical submitted to the court not less than 30 pages of proposed jury instructions concerning the meaning of the U.S. Surgical patent claims at issue.

and extrinsic evidence is necessary to explain that term, then an underlying fact question arises, and the construction of the claim should be left to the jury under appropriate instruction." *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 974 (Fed. Cir. 1985).[27] In *Tol-o-matic v. Proma Produkt-Und Marketing*, 945 F.2d 1546, 1550 (Fed. Cir. 1991), the Federal Circuit described the "underlying factual questions" that the jury should consider when the meaning of patent claim terms is unclear: "the description of the claimed element in the specification, the intended meaning and usage of the claim terms by the patentee, what transpired during the prosecution of the patent application, and the technological evidence offered by the

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[27] *See Associated Equipment*, 27 U.S.P.Q. at 1786 ("In a jury trial, it is the jury's province to find the facts. Thus, in cases where factual disputes underlie the ultimate legal question of claim interpretation, the issue of claim interpretation must be submitted to the jury for its decision once it finds the underlying facts."); *Drexelbrook Controls, Inc. v. Endress & Hauser, Inc.*, 1993 U.S. App. LEXIS 1915, at *4 (Fed. Cir. 1993) ("Although claim interpretation is a question of law, . . . where the claim terms in issue involve complex scientific principles and conflicting expert testimony, an underlying question of fact is created."); *Lemelson v. General Mills*, 968 F.2d 1202, 1206-07 (Fed. Cir. 1992) ("[T]he determination of the scope of the claim—its interpretation and proper construction—while denominated a question of law is in many cases based on the facts . . . . The underlying factual issues in dispute become the jury's province to resolve in the course of rendering its verdict on infringement."), *cert. denied*, 113 S.Ct. 976 (1993); *Tol-o-matic v. Proma Produkt-Und Marketing Gesellschaft m.b.H.*, 945 F.2d 1546, 1549-50 (Fed. Cir. 1991) ("When the meaning of a term in a patent claim is unclear, the jury may interpret the term en route to deciding the issue of infringement."); *Snellman v. Ricoh Co., Ltd.*, 862 F.2d 283, 287-88 (Fed. Cir. 1988) (upholding the jury's apparent claim interpretation in view of expert testimony and the language of the specification), *cert. denied*, 491 U.S. 910 (1989); *McGill, Inc. v. John Zink Co.*, 736 F.2d 666, 672 (Fed. Cir.) ("[If] the meaning of a term of art in the claims is disputed and extrinsic evidence is needed to explain the meaning, the construction of claims could be left to a jury [and] the jury cannot be directed to the disputed meaning for the term . . . ."), *cert. denied*, 469 U.S. 1037 (1984).

expert witnesses." Here the court determined that a genuine dispute of fact existed as to these questions, and as to how one skilled in the art would construe the U.S. Surgical patent claims,[28] as demonstrated by conflicting expert testimony on the issue. Pursuant to Federal Circuit precedent, the court submitted claim construction to the jury for its determination "en route to deciding the issue of infringement." *Id.* at 1550. Accordingly, the court denies U.S. Surgical's motion for a new trial on this ground.[29]

2. *Exclusion of Evidence of Ethicon's Patents*

As grounds for a new trial on the issue of infringement, Ethicon contends that the court erred in excluding evidence concerning Ethicon's '247 and '249 patents, which the PTO granted to Ethicon for the ERCA and EMCA.[30] Ethicon asserts that its patents on the accused devices are powerful evidence of non-infringement, and

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[28] Patent claims should be construed as one skilled in the art would construe the claims. *E.g., Moeller v. Ionetics, Inc.*, 794 F.2d 653, 657 (Fed. Cir. 1986).

[29] U.S. Surgical also contends that the court erred when it: (1) failed to instruct the jury as U.S. Surgical requested concerning (a) the absence of secondary considerations, (b) the significance of prior art references that teach away from the claimed invention, and (c) "equivalents" under 35 U.S.C. § 112; and (2) when it permitted certain evidence and did not instruct the jury as requested by U.S. Surgical concerning (a) the manner in which the invention was made; (b) the market effects of injunctive relief; (c) the significance of cumulative prior art references. The court concludes that these claims are without merit, and denies U.S. Surgical's motion for a new trial on these grounds.

[30] Prior to trial the court granted U.S. Surgical's motion in limine to exclude evidence and argument concerning Ethicon's patents on the accused devices. The court denied Ethicon's January 6, 1994, motion to reconsider the court's ruling. The court also denied Ethicon's proposed jury instruction, which would have informed the jury of Ethicon's patents on the accused devices and instructed the jury as to how to consider the evidence.

that the court's evidentiary ruling constitutes prejudicial error. Further, in its argument for JNOV as to the infringement of claim 1 of the '420 patent, Ethicon asserts that "the issuance of Ethicon's '247 and '249 patents in and of itself requires a finding of non-infringement [as to] the 'clip closing means' " claim element.

In *Atlas Powder v. E.I. DuPont De Nemours,* 750 F.2d 1569 (Fed. Cir. 1984), the Federal Circuit established that the receipt of a patent on an accused device does not negate infringement:

> [W]here defendant has appropriated the material features of the patent in suit, infringement will be found "even when those features have been supplemented and modified to such an extent that the defendant may be entitled to a patent for the improvement." (quoting *Bendix Corp. v. United States,* 199 U.S.P.Q 203 (Ct. Cl. Trail Div. 1978)). . . .
>
> . . . .
>
> "Another reason sometimes advanced for supposing that the structure of the second does not infringe the claim of the first patent is that the Patent Office has declared that a patentable difference exists. The premise is sound, but not the conclusion. In examining the second application, the Patent Office has no concern with the scope of the claim of the first, and does not and must not pay any attention thereto. . . . Patentable difference does not of itself tend to negative infringement." (quoting *Herman v. Youngstown Car Mfg. Co.,* 191 F. 579, 584-85 (6th Cir. 1911)).

Id. at 1580-81.[31] *See also Chemical Eng. Corp. v. Essef Indus., Inc.,* 795 F.2d 1565, 1569 & n. 6 (Fed. Cir.

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[31] Ethicon argues that the Federal Circuit's ruling in *Atlas Powder* concerning the relevance of subsequent patents on the accused device does not apply in cases involving means-plus- func-

1986) (patent on accused device "utterly irrelevant to infringement"); *King Instr. Corp. v. Otari Corp.*, 767 F.2d 853, 867 (Fed. Cir. 1985) (patent on accused device is "irrelevant in infringement analysis"), *cert. denied*, 475 U.S. 1016 (1986).

However, Ethicon asserts that the Federal Circuit's decision in *Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948 (Fed. Cir. 1993), required the court to admit evidence of Ethicon's patents on its accused devices. In *Hoganas*, the Federal Circuit affirmed the court's summary judgment ruling of non-infringement of the plaintiff's patent claims, both literally and under the doctrine of equivalents. *After* concluding that the district court correctly granted summary judgment, the Federal Circuit stated:

> In support of our conclusion, we note that the PTO granted [the defendant] a patent [on the accused product] with the knowledge of the [plaintiff's] patent, which is listed as art of record. Thus, the PTO must have considered the accused product to be non-obvious with respect to the patented composition. Accordingly, the issuance of that patent is relevant to the equivalence issue.

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tion claims, and that evidence of patents can be excluded only in cases concerning structure patent claims. However, courts have applied this rule of relevance to means-plus-function claims. *See e.g., Texas Instruments*, 805 F.2d at 1563-64; *Pfaff v. Wells Electronics, Inc.*, 9 U.S.P.Q.2d 1366, 1368 (N.D. Ind. 1988); *Rite-Hite Corp. v. Kelley Co.*, 629 F. Supp. 1042, 1056 (E.D. Wis. 1986); *Bendix Corp. v. United States*, 199 U.S.P.Q. 203, 221-222, 224 (Ct. Cl. 1978). The court disagrees with Ethicon's assertion that the PTO's analysis—determining whether a given structure in Ethicon's device is patentable (novel and nonabvious) after considering the structures specified in U.S. Surgical's patents, which were prior art—is identical to the jury's infringement analysis of means-plus-function claims, i.e., determining whether the EMCA/ERCA's structures to perform a certain function are the substantial equivalent of the structures disclosed in the U.S. Surgical patents to perform a certain function. *See Atlas Powder*, 750 F.2d at 1581.

Id. at 954. *Hokanas* established that patents on an accused device *can* be relevant to the infringement analysis. *Id. Hoganas* did not establish that such patents must always be admitted into evidence, and that failure to do so constitutes prejudicial error.[32] Here, the court excluded the evidence of Ethicon's '247 and '249 patents based not only on their limited relevance, but because the probative value of the evidence was substantially outweighed by the danger of unfair prejudice, confusion of the issues, and misleading the jury. Fed. R. Evid. 403. Because a jury could be easily misled by the evidence of Ethicon's patents, or fail to comprehend the proper limited role of such evidence in the infringement analysis, the Federal Circuit has affirmed the practice of excluding such evidence. *See Glaros v. H.H. Robertson Co.*, 230 U.S.P.Q. 393, 398 (Fed. Cir. 1986) (affirmed excluding patent on accused device because it "would have injected frolics and detours" and was "likely to create side issues that would have unduly distracted the jury from the main issues"); *see also Blanchard v. Putnam*, 75 U.S. 420, 425-26 (1869); *Union Carbide Corp. v. Tarancon Corp.*, 742 F. Supp. 1565, 1577 (N.D. Ga. 1990) ("most lay people believe that once they receive a patent, their invention has been held unique *and* non-infringing") (emphasis in original); *Crown Cork & Seal Co. v. Ethyl Corp.*, 11 U.S.P.Q.2d 1577, 1580 (E.D. Va. 1989); *Padco, Inc. v. Newell Cos. Inc.*, 13 U.S.P.Q.2d 1607, 1611, 1613 (E.D. Wis 1989).

Accordingly, the court denies Ethicon's motion for a new trial on this ground.[33]

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[32] In *Hoganas*, the Federal Circuit reviewed the court's ruling granting summary judgment, not an evidentiary ruling in a jury trial concerning the admission into evidence of the defendant's patents. In contrast to a jury trial, it is unlikely that the court would attach improper legal significance to the defendant's patents, or that the court would be confused by such evidence.

[33] Ethicon also moves for a new trial on the grounds that the court erred in its instructions to the jury concerning the doctrine

3. *The Dictionary*

On the first day of the jury's three day deliberations, the jury requested a dictionary. Early in the second day of the deliberations, the court provided to the jury *Webster's New World Dictionary*. U.S. Surgical argues that it is entitled to a new trial because the court erred in providing a dictionary to the jury during its deliberations.

The court instructed the jury as to the legal definitions of important terms in this action such as "obviousness" and "infringement." Further, the court instructed the jury that the court's instructions on the law were to govern their deliberations, and that they were not to stray from the legal principles contained in the instructions. *See DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 425 (Fed. Cir. 1986) (the law presumes that the jury followed the court's instructions and found all facts necessary for the verdict). In its jury instructions concerning the interpretation of patent claims, the court also instructed the jury that it should consider, among other factors, "the ordinary meaning of the language used in the claim." Charge to the Jury, at 13. Because the jury was properly instructed to consider the "ordinary meaning" of the terms used in the patent claims, the court concludes that the court correctly provided the jury with a dictionary upon their request. *See State v. Asherman*, 193 Conn. 695 (1984) ("the definition of words in our standard dictionaries is taken as a matter of common knowledge which the jury is supposed to possess"). Further, U.S. Surgical has not established that the provision of the dictionary resulted in prejudice. *Cf. United States v. Steele*, 785 F.2d 743, 748 (9th Cir. 1986) (irrelevant that dictionary definition of "infringement" may have differed from the legal defini-

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of equivalents. The court concludes that the motion lacks merit, and, therefore, denies the motion. Ethicon also moves for a trial on the issue of inequitable conduct, should the court grant U.S. Surgical's motion for JNOV, or order a new trial on any issue. Because the court has not so ordered, the motion is denied as moot.

tion set forth in the charge, absent evidence that the jury actually disregarded the court's instruction).

Accordingly, the court denies U.S. Surgical's motion for a new trial on this ground.

CONCLUSION

For the reasons contained herein, U.S. Surgical's motions for JNOV and for a new trial (documents no. 454 and 456) are denied, and Ethicon's motions for JNOV and for a new trial (document no 459) are denied.

It is so ordered, this 7th day of June, 1994, at Hartford, Connecticut.

/s/ Alfred V. Covello
ALFRED V. COVELLO
United States District Judge

APPENDIX E

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

94-1386, -1419

UNITED STATES SURGICAL CORPORATION,
Plaintiff-Appellant,

v.

ETHICON, INC. AND JOHNSON & JOHNSON HOSPITAL SERVICES, INC.,
Defendants/Cross-Appellants.

JUDGMENT

On Appeal from the United States District Court for the District of Connecticut in Case Nos(s).

92-CV-134

This CAUSE having been heard and considered, it is

ORDERED and ADJUDGED: AFFIRMED. *See* Fed. Cir. R. 36.

Per Curiam (NEWMAN, *Circuit Judge,* BENNETT, *Senior Circuit Judge,* and RADER, *Circuit Judge*).

ENTERED BY ORDER OF THE COURT

/s/ Francis X. Gindhart
FRANCIS X. GINDHART
Clerk

Dated Feb. 14, 1995

APPENDIX F

[Filed March 23, 1995]

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

94-1386
(DCT-92-CV-134)

U. S. SURGICAL

v.

ETHICON

ORDER

A combined petition for rehearing and suggestion for rehearing in banc having been filed by the APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the suggestion for rehearing in banc having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the suggestion for rehearing in banc be, and the same hereby is, DECLINED.

The mandate of the court will issue on March 30, 1995, unless another timely petition for rehearing is filed within the time permitted by Rule 40.

FOR THE COURT,
FRANCIS X. GINDHART
CLERK

Dated: March 23, 1995

By /s/ Diane M. Frye
DIANE M. FRYE
Chief Deputy Clerk

cc: WILLIAM E. MCDANIELS
DAVID F. DOBBINS

Note: Pursuant to Fed Cir. R. 47.6, this order is not citable as precedent. It is a public record.

APPENDIX G

SUPREME COURT OF THE UNITED STATES

No. 94-2081

UNITED STATES SURGICAL CORPORATION,
Petitioner

v.

ETHICON, INC. AND JOHNSON & JOHNSON HOSPITAL SERVICES, INC.

ORDER ALLOWING CERTIORARI,
Filed April 29, 1996

The petition herein for writ of certiorari to the United States Court of Appeals for the Federal Circuit is granted.

APPENDIX H

SUPREME COURT OF THE UNITED STATES

No. 94-2081

UNITED STATES SURGICAL CORPORATION,
Petitioner
v.
ETHICON, INC. AND JOHNSON & JOHNSON HOSPITAL SERVICES, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

THIS CAUSE having been submitted on the petition for a writ of certiorari and response thereto,

ON CONSIDERATION WHEREOF, it is ordered and adjudged by this Court that the judgment of the above court in this cause is vacated with costs and the case is remanded to the United States Court of Appeals for the Federal Circuit for further consideration in light of *Markman* v. *Westview Instruments*, 517 U.S. —— (1996).

IT IS FURTHER ORDERED that the petitioner United States Surgical Corporation recover from Ethicon, Inc. and Johnson & Johnson Hospital Services, Inc. Three Hundred Dollars ($300.00) for their costs herein expended.

April 29, 1996

Justice Breyer took no part in the consideration or decision of the case.

Clerk's costs: $300.00

APPENDIX I

[Filed Feb. 2, 1994]

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

Civ. No. 5:92CV00134(AVC)

UNITED STATES SURGICAL CORPORATION

v.

ETHICON, INC. *et al.*

PLAINTIFF UNITED STATES SURGICAL CORPORATION'S THIRD SET OF PROPOSED INSTRUCTIONS

* * * *

B. *Meaning of U.S. Surgical's Claims*

1. *Claim 1 of the '420 Patent (PPI 37)*

Claim 1 of the '420 Patent reads in full:

In combination:

a) a trocar having a cannula, and valve means for sealing said cannula, said cannula adapted for entry into a body cavity;

b) an endoscopic clip applier having:

i) a frame;

ii) an endoscopic portion, defining a longitudinal axis and extending distally from said frame, said endoscopic portion being insertable into said cannula through said valve means in sealing engagement therewith, said

endoscopic portion further including a plurality of surgical clips disposed in any array and clip closing means for sequentially closing said surgical clips; and

iii) seal means associated and adapted to cooperate with at least one of said endoscopic portion and said frame to obstruct passage of gaseous media from the body cavity.

This claim covers the combination of "a) a trocar having a cannula, and valve means for sealing said cannula, said cannula adapted for entry into a body cavity." Claim element a) calls for a trocar having a cannula with valve means for sealing the cannula. The claim element "valve means for sealing said cannula" is a means-plus-function claim element. The stated function, as I interpret it, is to seal the cannula. The structure for performing this function includes all such structures contained in trocars known in the art at the time the '420 Patent Application was filed. Such trocars contain structures both to seal the cannula when no instrument is in the cannula, such as a flapper-type valve, and structures which form a seal between the instrument and the cannula when an instrument is inserted in the cannula, such as a gasket. The flapper valve may engage the gasket, as in the U.S. Surgical Surgiport Trocar, or be separate from the gasket, as in reusable instruments that were known at the time the '420 Patent Application was filed. Therefore, if you find that the Ethicon Endopath Trocar is a trocar having the same or equivalent structure to the structures I have just described, then the accused devices satisfy claim element a) of Claim 1 of the '420 Patent.

The next claim element is claim element "b) an endoscopic clip applier" having the further elements identified in parts b)i), b)ii), and b)iii). I interpret the word "endoscopic" in the phrase "endoscopic clip applier" to refer generally to instruments having elongated and rela-

tively narrow operating portions for insertion into a cannula or a small wound in the skin.

The next claim element—b) i)—calls for "a frame." I interpret this structure claim element to mean a housing for the non-endoscopic body of the apparatus. This claim element pertains only to the outer portion of the instrument body. It does not include the activating handle or release button of the claimed instrument or any of the parts inside the frame. Therefore, if you find that defendants' accused devices include a housing for the non-endoscopic body of the instrument, then defendants' accused devices satisfy this element of Claim 1 of the '420 Patent.

The initial clause of the next claim element—b) ii)—recites "an endoscopic portion defining a longitudinal axis and extending distally from said frame, said endoscopic portion being insertable into said cannula through said valve means in sealing engagement therewith." I interpret this structure claim element to mean an endoscopic portion extending away from the frame which can be inserted through the trocar cannula so that the cannula valve means forms a seal around the endoscopic portion. Therefore, if you find that the defendants' accused devices contain an endoscopic portion extending away from the frame which can be inserted through a trocar cannula so that the cannula valve means forms a seal around the endoscopic portion, then defendants' accused devices satisfy this element of Claim 1 of the '420 Patent.

The next clause of claim element b) ii) recites "said endoscopic portion further including a plurality of surgical clips disposed in an array." I interpret this structure claim element to mean that more than one clip is stored in the endoscopic section of the claimed instrument. For purposes of this claim, it is immaterial how the clips are stored. Therefore, if you find that numerous clips are stored in the endoscopic portion of defendants' accused devices, regardless of how they are stored, then defend-

ants' accused devices satisfy this element of Claim 1 of the '420 Patent.

The final clause of claim element b) ii) calls for "clip closing means for sequentially closing said surgical clips." This is a means-plus-function claim element. The stated function of this particular means-plus-function claim element is "sequentially closing said surgical clips." I interpret this to mean the closing of surgical clips one at a time and one after another. The structure or "means" described in the patent specification for performing the stated function is a pair of flexible opposing jaws which are cammed together into closure by a distally moving channel.

In order to find that this claim element of the '420 Patent has been met, you must first find that the defendants' accused devices perform the function of closing surgical clips one at a time and one after another. Then you must find that the defendants' accused devices have a pair of flexible opposing jaws and a distally-moving cam channel, or equivalent structure, which perform this function. One example of equivalent structure, as I explained earlier, is structure which a person of ordinary skill in the art would consider as interchangeable with the structure disclosed in the patent specification for performing the stated function.

The final claim element of Claim 1 of the '420 Patent reads as follows: "seal means associated and adapted to cooperate with at least one said endoscopic portion and said frame to obstruct passage of gaseous media from the body cavity." This claim element is also stated in means-plus-function language. The stated function, as I interpret it, is to obstruct the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed. It is not the stated function to prevent all gas from escaping. The structure or "means" described in the patent specification for performing this function is close tolerances for the internal moving parts of the en-

doscopic portion, and/or a seal block with or without silicone grease.

In order to find that this claim element of the '420 Patent has been met, you must first find that the defendants' accused devices perform the function of obstructing the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed. Then you must find that the defendants' accused devices utilize close tolerances for the internal moving parts of the endoscopic portion, and/or a seal block with or without silicone grease, or equivalent structure, which perform this function.

If you find that defendants' Endopath trocar and EMCA, ERCA devices meet all of the limitations recited in the claims, and that defendants have made, used or sold a combination of such a trocar and EMCA, ERCA, then Claim 1 is infringed.*

2. *Claim 1 of the '057 Patent (PPI 38)*

Claim 1 of the '057 Patent reads in full:

An apparataus for endoscopic application of surgical clips to body tissue which comprises:

a) frame means;

b) endoscopic means connected to said frame means of generally elongated configuration and extending distally from said frame means and including:

i) means for storing a plurality of surgical clips;

ii) means for individually advancing said clips to the distal portion of said endoscopic means for positioning adjacent the body tissue to be clipped;

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* '420 Patent, Col. 15, lines 36-48 (claim element 1a); '420 Patent, Col 1, lines 47-51 (claim elements 1a & 1b)—combination of endoscopic clip applier and trocar); '420 Patent, Col. 4, lines 7-10, Col. 2, lines 67-68, Figure 2 (claim element 1b)i)—frame); Col. 3, line 29

iii) means for at least partially closing each said clip at least sufficient to grip the body tissue after the clip has been advanced distally to said distal portion of said endoscopic means; and

iv) gaseous sealing means.

Claim 1 uses the preamble and transitional phrase "An apparataus for endoscopic application of surgical clips to body tissue which comprises." I interpret the words "an apparatus for endoscopic application of surgical clips to body tissue" to mean an endoscopic multiple clip applier. Therefore, if you find that defendants' accused devices are endoscopic multiple clip appliers, then the preamble of Claim 1 of the '057 Patent has been met. As I explained earlier, the word "comprises" is interpreted the same as "including" or "containing." In patent claims, comprising means that the claims are open-ended. The presence of additional components in the accused product is irrelevant to whether the product infringes the patent claim. Therefore, if you find that defendants' accused devices contain all of the elements in Claim 1 and, in addition, defendants' accused devices contain additional components, defendants' accused devices still infringe the claim.

Claim element 1a) reads "frame means." I interpret this structure claim element to mean a housing for the non-endoscopic body of the apparatus. This claim element pertains only to the outer portion of the instrument body. It does not include the activating handle or release button of the claimed instrument or any of the parts inside the

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and 54, Col. 4, line 13 (claim element 1b)ii)—endoscopic portion insertable into cannula); Col 4, lines 23-25, Col. 8, line 66 (claim element 1b)ii)—clip closing means for sequentially closing said surgical clips); Col. 4, line 64—Col. 5, line 1, Col. 5, lines 4-17 (claim element b)iii—seal means); Trial Testimony of Basam E. Nabulsi, Esq., pp. 708-716 (discussing meaning) to person of ordinary skill in art of corresponding structure for valve means claim element.

frame. Therefore, if you find that defendants' accused devices have a housing for the non-endoscopic body of the instrument, then defendants' accused devices satisfy this element of Claim 1 of the '057 Patent.

The initial clause of the next claim element—1b)—reads "endoscopic means connected to said frame means of generally elongated configuration and extending distally from said frame means." I interpret this structure claim element to mean an endoscopic portion connected to the frame and extending away from the frame. Therefore, if you find that the defendants' accused devices have an endoscopic portion connected to the frame and extending away from the frame, then defendants' accused devices satisfy this element of Claim 1 of the '057 Patent.

Claim elements 1b)i), 1b)ii), 1b)iii), and 1b)iv) are further elements which are part of and included in the endoscopic portion.

Clause i) of claim element 1b) reads "means for storing a plurality of surgical clips." This is a means-plus-function claim element. The stated function, as I interpret it, is to store a plurality of surgical clips. The structure or means disclosed in the patent specification for performing this function is a clip track which holds an array of surgical clips and a spring to bias the clips toward the distal or far end of the instrument.

In order to find that this claim element of the '057 Patent has been met, you must first find that the defendants' accused devices perform the function of storing a plurality of surgical clips. Then you must find that the defendants' accused devices have a clip track which holds an array of surgical clips and a spring to bias the clips toward the distal or far end of the instrument, or equivalent structure, which perform this function.

Clause ii) of claim element 1b) reads "means for individually advancing said clips to the distal portion of said endoscopic means for positioning adjacent the body

tissue to be clipped." This is a means-plus-function claim element. The stated function, as I interpret it, is to advance clips one at a time to the jaws. The structure or means described in the patent specification for performing this function is a pusher bar and escapement tabs extending into the path of the clips.

In order for you to find that this claim element of the '057 Patent has been met, you must first find that the defendants' accused devices perform the function of advancing clips one at a time to the jaws. Then you must find that the defendants' accused devices have a pusher bar and escapement tabs extending into the path of the clips, or equivalent structure, which perform this function.

Clause iii) of claim element 1b) reads "means for at least partially closing each said clip at least sufficient to grip the body tissue after the clip has been advanced distally to said distal portion of said endoscopic means." This is a means-plus-function claim element. The stated function, as I interpret it, is to at least partially close surgical clips sufficiently to grip body tissue. The structure or means described in the patent specification for performing this function is flexible opposing jaws and a distally moving cam channel.

In order for you to find that this claim element of the '057 Patent has been met, you must first find that the defendants' accused devices perform the function of at least partially closing surgical clips sufficiently to grip body tissue. Then you must find that the defendants' accused devices have flexible opposing jaws and a distally moving cam channel, or equivalent structure, which performs this function.

The final clause iv) of claim element 1b) reads "gaseous sealing means." I interpret this as a structure claim element which requires a seal to obstruct the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed. Therefore, if you find that defendants' accused devices contain a seal to obstruct

the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed, then defendants' accused devices satisfy this element of Claim 1 of the '057 Patent.*

3. *Claim 2 of the '057 Patent (PPI 39) (A. 92)*

Claim 2 of the '057 Patent reads in full: "The apparatus according to Claim 1 wherein said gaseous seal means comprises silicone grease." Claim 2 of the '057 Patent is a dependent claim. As I explained earlier, a dependent claim includes a reference to at least one other claim in the patent. In this case, Claim 2 of the '057 Patent makes reference to Claim 1 of the '057 Patent by the phrase "the apparatus according to claim 1." As a dependent claim, Claim 2 incorporates all of the limitations contained in Claim 1 which I have just interpreted for you. Claim 2 also includes an additional element. All the elements of Claims 1 and 2 must be present before infringement of Claim 2 can be found.

The additional element of Claim 2 reads "said gaseous seal means comprises silicone grease." I interpret this as a structure claim which requires the use of silicone grease as part of the seal to obstruct the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed.

In order to find that Claim 2 of the '057 Patent has been infringed by defendants' accused devices, you must first find that defendants' accused devices contain all of the claim elements of Claim 1 of the '057 Patent as I

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* '057 Patent, Abstract, 420 Patent, Col. 4, lines 7-10, Col. 2, lines 67-68 (claim element 1t)—frame means); 057 Patent, Col. 5, lines 11-13 (claim element 1b)—endoscopic portion); '057 Patent, Col. 3, lines 37-41 (claim element 1b)i)—clip storing means); '057 Patent, Col. 3, lines 42-51, '420 Patent, Col. 14, lines 9-12 (claim element 1b)ii)—clip advancing means: '420 Patent, Col. 4, lines 23-25 (claim element 1b)iii)—clip closing means; '420 Patent, Col. 4, line 64 through Col. 5, line 1, Col. 5, lines 4-17 (claim element 1b)iv)—gaseous sealing means).

have interpreted them. Then you must find that defendants' accused devices also contain silicone grease as part of the seal.

4. *Claim 7 of the '057 Patent (PPI 40)*

Claim 7 of the '057 Patent reads in full:

A disposable apparatus for endoscopic application of surgical clips to body tissue which comprises:

a) a frame;

b) an elongated endoscopic section connected at the proximal end thereof to said frame and extending distally from said frame, said endoscopic section including:

i) means for storing a plurality of surgical clips;

ii) a pair of jaws positioned at the distal portion of said endoscopic section and adapted for reception of said clips;

iii) means for individually advancing said clips distally for positioning within said pair of jaws to be positioned adjacent the body tissue to be clipped;

iv) means for at least partially closing said jaws about each said clip to close said clips at least partially about the body tissue; and

v) gaseous sealing means.

Claim 7 uses the preamble and transitional phrase "A disposable apparatus for endoscopic application of surgical clips to body tissue which comprises." I interpret the words "a disposable apparatus for endoscopic application of surgical clips to body tissue" to mean a disposable endoscopic-multiple clip applier. Therefore, if you find that defendants' accused devices are disposable endoscopic multiple clip appliers, then the preamble of claim 7 of the '057 Patent has been met. As I explained earlier, the word

"comprises" is interpreted the same as "including" or "containing." In patent claims, comprising means that the claims are open-ended. The presence of additional components in the accused product is irrelevant to whether the product infringes the patent claim. Therefore, if you find that defendants' accused devices contain all of the elements in Claim 7 and, in addition, defendants' accused devices contain additional components, defendants' accused devices still infringe the claim.

Claim element 7a) reads "a frame." I interpret this structure claim element to mean a housing for the non-endoscopic body of the apparatus. This claim element pertains only to the outer portion of the instrument body. It does not include the activating handle or release button of the claimed instrument or any of the parts inside the frame. Therefore, if you find that defendants' accused devices have a housing for the non-endoscopic body of the instrument, then defendants' accused devices satisfy this element of Claim 7 of the '057 Patent.

The initial portion of the next claim element—7b)—reads "an elongated endoscopic section connected at the proximal end thereof to said frame and extending distally from said frame." I interpret this structure claim element to mean an endoscopic section connected to the frame at its proximal end and extending away from the frame. Therefore, if you find that the defendants' accused devices have an endoscopic section connected to the frame at its proximal end and extending away from the frame, then defendants' accused devices satisfy this element of Claim 7 of the '057 Patent.

Claim elements 7b)i), 7b)ii), 7b)iii), 7b)iv), and 7b)v) are further elements which are part of and included in the endoscopic portion.

Clause i) of claim element 7b) reads "means for storing a plurality of surgical clips." This is a means-plus-func-

tion claim element. The stated function, as I interpret it, is to store a plurality of surgical clips. The structure or means disclosed in the patent specification for performing this function is a clip track which holds an array of surgical clips and a spring to bias the clips toward the distal or far end of the instrument.

In order to find that this claim element of the '057 Patent has been met, you must find that the defendants' accused devices perform the function of storing a plurality of surgical clips. Then you must find that the defendants' accused devices have a clip track which holds an array of surgical clips and a spring to bias the clips toward the distal or far end of the instrument, or equivalent structure, which perform this function.

Clause ii) of claim element 7b) reads "a pair of jaws positioned at the distal portion of said endoscopic section and adapted for reception of said clips." I interpret this structure claim element to mean a pair of jaws adapted to receive surgical clips. Therefore, if you find that defendants' accused devices have a pair of jaws adapted to receive surgical clips, then the defendants' accused devices satisfy this element of Claim 7 of the '057 Patent.

Clause iii) of claim 7b) reads "means for individually advancing said clips distally for positioning within said pair of jaws to be positioned adjacent the body tissue to be clipped." This is a means-plus-function claim element. The stated function, as I interpret it, is to advance clips one at a time to the jaws. The structure or means described in the patent specification for performing this function is a pusher bar and escapement tabs extending into the path of the clips.

In order for you to find that this claim element of the '057 Patent has been met, you must first find that the defendants' accused devices perform the function of advancing clips one at a time to the jaws. Then you must

find that the defendants' accused devices have a pusher bar and escapement tabs extending into the path of the clips, or equivalent structure, which perform this function.

Clause iv) of claim element 7b) reads "means for at least partially closing said jaws about each said clip to close said clips at least partially about the body tissue." This is a means-plus-function claim element. The stated function, as I interpret it, is to at least partially close the jaws to at least partially close the surgical clips about the body tissue. The structure or means described in the patent specification for performing this function is a distally-moving cam channel capable of at least partially closing the jaws.

In order for you to find that this claim element of the '057 Patent has been met, you must first find that the defendants' accused devices perform the function of at least partially closing the jaws to at least partially close the surgical clips about the body tissue. Then you must find that the defendants' accused devices have a distally-moving cam channel capable of at least partially closing the jaws, or equivalent structure, which performs this function.

The final clause v) of claim element 7b) reads "gaseous sealing means." I interpret this as a structure claim element which requires a seal to obstruct the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed. Therefore, if you find that defendants' accused devices have a seal to obstruct the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed, then defendants' accused devices satisfy this element of Claim 7 of the '057 Patent.*

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* '057 Patent, Abstract, '420 Patent, Col. 4, lines 7-10, Col. 2, lines 67-68 (claim element 7a)—frame); '057 Patent, Col. 5, lines 11-13 (claim element 7b)—endoscopic portion); '057 Patent, Col. 3, lines 37-41 (claim element 7b)i)—cilp storing means); '057 Patent, Col.

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7. *"Clip Closing Means" (PPI 43)*

Defendants have presented expert testimony that their accused devices do not satisfy the limitation in means-plus-function claim element 1 b)ii) of the '420 Patent calling for "clip closing means for sequentially closing said surgical clips." Defendants' expert offered a number of reasons why the structure in the accused devices for performing the function of closing surgical clips one after another and one at a time is not the same or equivalent. Defendants' expert said that the accused devices contain differently configured jaws than the U.S. Surgical jaws. The configuration of the jaws, however, bears no relevance to your determination of whether this claim element has been satisfied. The specific structure of the jaws is not part of the claim element because the claim element does not include how the jaws abut when cammed together, the width of the jaws, or how the forces of the jaws are applied to clips. The structure described in the patent specification for performing the function of closing surgical clips one at a time and one after another is simply flexible opposing jaws and a distally-moving cam channel.

In addition, defendants' expert testified that the activivating handle and other structure attached to the frame perform the function of sequentially closing surgical clips. You may not consider structure such as the activating handle because that structure is not within the shaft or endoscopic portion and because it is not part of the clip closing means. The clip closing means claim limitation refers only to structure within the endoscopic portion. Therefore, you must look only to the structure within

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3, lines 42-51 (claim element 7b)iii—clip advancing means); '057 Patent, Col. 8, lines 6-8, '420 Patent, Col. 8, lines 45-46 (claim element 7b)iv)—clip closing means); '420 Patent, Col. 5, lines 4-17 (claim element 7b)v)—gaseous sealing means).

the endoscopic portion of defendants' accused devices for performing the function of closing surgical clips one after another and one at a time to determine whether it is the same or equivalent to the structure described in the patent specification.

As I explained earlier, the patent law allows an inventor to be his or her own lexicographer. An inventor can define the relevant structure for performing a stated function in any way he or she wants. While other structure may in fact assist in performing the stated function of a means-plus-function claim, you must consider only the structure specified by the inventor for performing the function of a particular claim element. Therefore, while the activating handle of defendants' accused devices must be squeezed to cam the jaws shut, the activating handle is not part of the structure that performs the function of closing surgical clips one after another and one at a time. The claim element is limited to structure in the endoscopic portion and is specifically defined as flexible opposing jaws which are cammed together into closure by a distally moving cam channel.*

8. *"Seal Means" (PPI 44)*

With respect to the means-plus-function claim element in Claim 1 of the '420 Patent reciting "seal means . . . to obstruct passage of gaseous media from the body cavity," defendants have offered expert testimony that the structure in defendants' accused devices for obstructing the passage of gas from the body cavity is not the same as or equivalent to the structure described in the specifications of U.S. Surgical's patents. Defendants' expert testified that the accused devices have a central chamber and a series of additional chambers which serve other functions apart from sealing. Defendants' expert testified that the additional chambers serve as overflow

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* *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1580 (Fed. Cir. 1988).

for any grease that migrates from the central chamber as the feed bar and cam channel in defendants' accused devices move back and forth. He also testified that the chambers function to store body fluid that may come into the accused devices during a surgical procedure.

The additional structure identified by defendants' expert, such as a multi-chamber system to prevent the migration of silicone grease, does not mean that defendants' accused devices do not have sealing means as recited in the claims. It is irrelevant to the question of infringement that the additional structure in the accused devices performs added functions, such as reducing pressure or capturing grease or body fluids, or assisting or improving in sealing. The only question you must answer for this claim element is whether defendants' accused devices include structure that provide close tolerances with the internal moving parts of the endoscopic portion, such as a seal block with silicone grease, or equivalent structure, which perform the function of obstructing the passage of gas from the body cavity sufficiently so that the surgical procedure can be performed.*

9. *"Clip Advancing Means" (PPI 45)*

Defendants' expert has testified that the pusher bar in the accused devices for performing the function expressed as advancing or individually advancing the clips from clip storage to the jaws is not the same as or equivalent to the structure described in U.S. Surgical's patent specifications.

Defendants' expert pointed out that the pusher bar in the accused devices is wider than the pusher bar disclosed in the U.S. Surgical patent drawings and pushes the clips at a point further from the center axis of the

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* *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1580 (Fed. Cir. 1988); *Atlas Powder Co. v. E.I. DuPont de Nemours & Co.*, 750 F.2d 1569, 1580-81 (Fed. Cir. 1984).

clip. These differences are irrelevant to the question of infringement because these structural details are neither set forth in nor required by the claim elements themselves. The claim elements merely require a pusher bar. The dimensions of the pusher bar are irrelevant so long as the pusher bar in defendants' accused devices functions to advance or individually advance the clips from clip storage to the jaws.

The other difference highlighted during the testimony of defendants' expert is that the pusher bar depicted in U.S. Surgical's patent is in two planes while the Ethicon pusher bar is in one plane. This difference is irrelevant to these claim elements because the claim elements merely require that the pusher bar individually advance the clips from clip storage to the jaws. If you find that defendants' accused devices have a pusher bar which performs the function of individually advancing the clips from clip storage into the jaws, then the claim elements are satisfied.

* * * *

APPENDIX J

[Feb. 10, 1994]

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

Civ. No. 5:92CV00134(AVC)

UNITED STATES SURGICAL CORPORATION

v.

ETHICON, INC. *et al.*

[2719] THE COURT: . . .

* * * *

[2730] Let me introduce you to the issues in this case. In this case U.S. Surgical is the owner of United States letter patents number 5,084,057 and number 5,100,420, both entitled apparatus and method for applying surgical clips in laparoscopic and endoscopic procedures. I will refer to these as the '057 and the '420 patents. U.S. Surgical assets that Ethicon has infringed claims 1, 2 and 7 of the '057 patent and claim 1 of the '420 patent, by making, using and selling endoscopic multiple clip appliers known as the LIGACLIP ERCA and the LIGACLIP EMCA.

Now, in response Ethicon denies that its devices infringe upon the claims of U.S. Surgical's patents. Ethicon also affirmatively asserts that the U.S. patent surgical patents are invalid because the inventions claimed in the [2731] patents were obvious.

What now follows is an explanation of the method you should use and the factors you should consider in order to reach your verdict on the various issues in this case. It is important that you follow the instructions in their entirety and that you proceed with the analysis in the exact order that I've set it out for you. Before you make any decisions, you should read these instructions, and as I've said, you'll have them with you in the jury room, and be certain that you understand them.

Now, for each of claims 1, 2 and 7 of the '057 patent and claim 1 of the '420 patent you should do the following:

First you must construe each one of the patent claims at issue and then you should answer this question: Has U.S. Surgical met its burden of proving by a preponderance of the evidence that the EMCA and ERCA sold by Ethicon infringe either claims 1, 2 or 7 of the '057 patent or claim 1 of the '420 patent?

Second, you should answer the following question for each claim at issue in the case: Has Ethicon met its burden of proving by clear and convincing evidence that the claims are invalid?

Let's talk a little about patent infringement. In order to succeed on its claim for patent infringement, U.S. [2732] Surgical must prove, again by a preponderance of the evidence, that the Ethicon devices infringe upon the claims.

The determination of infringement is a two step process. First, you must determine the meaning of the language of the claims. Second, you must compare the Ethicon device to the language of the claims, as you've interpreted them, in order to determine whether the Ethicon device contains each element of the patent claims. Patent claims can be infringed either literally, which means that the accused device includes each element of the patent claims, or under the Doctrine of Equivalents.

Now, the interpretation, let's talk about the interpretation of claims. The patent claims are the numbered paragraphs at the end of the patent. The claims involved here are claims 1 of the '420 patent and claims 1, 2 and 7 of the '057 patent, and you have each been furnished a copy of these patents and we will see to it that you obviously have copies of these patents with you. The claims describe the words the parameters of the invention. Each claim has various subparts or claim elements. In order to infringe a claim, each element of the claim must be infringed. If any one claim of a patent is infringed, then the patent may be said to be infringed.

Because I have determined that there's a factual dispute here concerning the meaning of the patent claims, you must determine how the claims in this patent should be [2733] interpreted. You should interpret the language of the claim as one of ordinary skill in the art would do.

In interpreting the language of the claims you should consider:

One, the ordinary meaning of the language used in the claim;

Two, the specifications in the patent;

Three, the prosecution history of the patent;

Four, the other claims in the patent;

Five, the prior art in the field.

Now, in this case you have heard expert testimony concerning how those skilled in the art would interpret the claims. You may also rely on this expert testimony in determining the meaning of the patent claims.

As you have learned, there are two types of claim elements in U.S. Surgical's patents: Structure elements and means plus function elements. Whether a claim element is a structure element or a means plus function element will affect how you interpret that particular claim element.

A structure element identifies a specific structure. In interpreting a structure element, you need only determine what structure is defined by the language of the claim.

A means plus function element describes a means for performing a certain function. When means plus function [2734] claims are used, the patent does not protect every structure or component that can be used to perform that function. Rather, means plus function claims must be interpreted to include only the structures described in the patent specifications for performing the given function or their equivalent. Therefore, to interpret a means plus function element, you must determine what structure or structures are described in the patent specifications for performing each such function and what structures would constitute their equivalent.

After you have determined the meaning of the claims at issue, you can move on to the next step, comparing the accused devices to the claims as you have interpreted them.

Let's talk about literal infringement. In deciding whether the Ethicon device literally infringes upon the U.S. Surgical patents, you must determine whether the accused device encroaches upon any one of the claims in the U.S. Surgical patents, which means that the combination of elements that are recited in a given claim of the U.S. Surgical patent must also be found in the Ethicon device. In making this determination you must consider each claim separately.

The U.S. Surgical patents or either of them are literally infringed if the Ethicon device contains every element of at least one claim of the patent.

As I told you, a structure element identifies a specific structure. After you interpret the meaning of a given [2735] structure element you must determine whether the accused device includes a claimed structure.

Now, in interpreting the means plus function claim elements, you must determine the following: One, what function is called for by the claim element, and two, what

structure, or means, is described in the patent specifications for performing the stated function. A means plus function claim is only infringed if:

One, the function of the accused device is identical to the function disclosed in the claim element of the patent; and

Two, the structure which performs that function in the accused device is the same as, or the equivalent of, the structure described in the patent specifications.

The second of these two steps requires you to determine whether the accused device includes the same structure as described in the patent or its equivalent. You may determine that a structure in the Ethicon device is equivalent if you determine that a person of ordinary skill in the art would consider the structure found in the accused device an insubstantial change from the structure disclosed in the patent specification.

Using this methodology for each of the four patent claims, you must determine whether the Ethicon device includes each element of the patent claim. If you conclude that the [2736] Ethicon device includes each element of any one patent claim, then you have found literal infringement of that claim.

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[2738] Let's talk about patent invalidity. It's a defense to an action for patent infringement that a given [2739] patent claim is invalid. In this case Ethicon contends that U.S. Surgical's patent claims are invalid because the claimed invention was obvious. You must next determine whether any of the U.S. Surgical patent claims at issue in this case are invalid. As I told you earlier, Ethicon has the burden of proving this by clear and convincing evidence.

In considering the question of obviousness, the meaning of the language of the patents must be given the same construction as when you were considering the question of infringement.

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APPENDIX K

STATUTORY PROVISIONS

1. Title 35 U.S.C. § 103 provides:

Conditions for patentability; non-obvious subject matter

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

(b)(1) Notwithstanding subsection (a), and upon timely election by the applicant for patent to proceed under this subsection, a biotechnological process using or resulting in a composition of matter that is novel under section 102 and nonobvious under subsection (a) of this section shall be considered non-obvious if—

(A) claims to the process and the composition of matter are contained in either the same application for patent or in separate applications having the same effective filing date; and

(B) the composition of matter, and the process at the time it was invented, were owned by the same person or subject to an obligation of assignment to the same person.

(2) A patent issued on a process under paragraph (1)—

(A) shall also contain the claims to the composition of matter used in or made by that process, or

(B) shall, if such composition of matter is claimed in another patent, be set to expire on the same

date as such other patent, notwithstanding section 154.

(3) For purposes of paragraph (1), the term "biotechnological process" means—

(A) a process of genetically altering or otherwise inducing a single- or multi-celled organism to—

(i) express an exogenous nucleotide sequence,

(ii) inhibit, eliminate, augment, or alter expression of an endogenous nucleotide sequence, or

(iii) express a specific physiological characteristic not naturally associated with said organism;

(B) cell fusion procedures yielding a cell line that expresses a specific protein, such as a monoclonal antibody; and

(C) a method of using a product produced by a process defined by subparagraph (A) or (B), or a combination of subparagraphs (A) and (B).

(c) Patentability shall not be negatived by the manner in which the invention was made. Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

2. Title 35 U.S.C. § 112 provides:

Specification

The specification shall contain a written description of the invention, and of the manner and process of making

and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

3.--Title 35 U.S.C. § 282 provides:

Presumption of validity; defenses

A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. Notwithstanding the preceding sentence, if a claim to a composition of matter is held invalid and that claim was the basis of a determination of nonobviousness under section 103(b)(1), the process shall no longer be considered nonobvious solely on the basis of section 103(b)(1). The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Noninfringement, absence of liability for infringement or unenforceability,

(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of sections 112 or 251 of this title,

(4) Any other fact or act made a defense by this title.

In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent

in suit or, except in actions in the United States Claims Court, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires. Invalidity of the extension of a patent term or any portion thereof under section 156 of this title because of the material failure—

(1) by the applicant for the extension, or

(2) by the Commissioner,

to comply with the requirements of such section shall be a defense in any action involving the infringement of a patent during the period of the extension of its term and shall be pleaded. A due diligence determination under section 156(d)(2) is not subject to review in such an action.